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STRESS FOR NURSES
WORKING WITH THE CANCER PATIENT

BY

(C) RHEA ARCAND

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH IN
PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE
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ABSTRACT

This study was designed to identify the sources of stress among nurses working with cancer patients and their families. In addition, the relationship between the level of stress perceived by the nurses and selected personal characteristics such as age, education, experience, marital status, religiosity and personal experience with cancer and loss were explored.

The unit of analysis was the nurse and the total population of nursing staff at the Cross Cancer Institute were included in the study. Data was collected by means of an instrument comprising of 72 stress situations and 32 items related to demographic data.

The sources of stress were identified by analyzing the data in terms of perceived: 1) amount of stress, 2) frequency of occurrences of the situation and the 3) composite scores comprising both dimensions. Nursing staff in this study, reported the greatest stress in areas related to workload, insufficient resources, dealing with patients having poor prognosis, suffering and death, performing painful treatments, and dealing with families who are upset. As a means of identifying major types of stress being measured and the best predictors of the respondents' scores on the stress factors, two statistical procedures were used: factor analysis and step-wise multiple regression analysis respectively.

Applying factor analysis and utilizing 36 of the original 72

items, a five factor orthogonal solution was obtained which included stress factors related to: 1). the death of a patient, 2) dying and suffering, 3) lack of communication, 4) job-ambiguity and 5) critical physician feedback. The sources of stress (factors) identified were consistent with sources reported in the literature. Over half of the variance explained could be attributable to the first factor (death of a patient).

The results of step-wise multiple regression analysis suggested it was difficult to identify a few select predictors for each sourse of stress. Overall, it seemed that knowing where the nurse worked within the Institute, the educational level, and the frequency of encounters with the death of a patient, best predicted stress due to the death of a patient. As expected, proximity to the terminally ill patient was the best predictor of stress related to dying and suffering, and "frequency of dealing with terminally ill" seemed to be the best predictor of stress related to job ambiguity. Knowing the nurses' age seemed most helpful in predicting the extent of stress related to communication. And finally, stress related to critical physician feedback was best predicted by knowing where the nurse worked within the Institute.

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CHAPTER 1

INTRODUCTION

Recent interest in the field of death and dying has resulted in a proliferation of articles dealing with the stress experienced by staff caring for critically ill and/or dying patients. Much of the literature focuses on nurses working in Intensive Care or Coronary Care Units. The majority of the literature is anecdotal, consisting mainly of conjecture based on individual observation or interview, and case studies of personal experiences which are supported largely by value judgements. (i.e. problem of subjectivity).

More specifically, there is a paucity of literature describing the source and nature of stress experienced by nurses when working with cancer patients. There appears to be a number of factors which contribute to the increased demands made upon the nurse working with cancer patients. Examples include: the complexity of cancer therapy, demand for increased knowledge and technical skills, the increased number of people being actively treated for cancer, and the growing sense of responsibility to consider quality of living for these patients (Crayton, Brown & Morrow, 1978, p.211). As treatment measures improve, the length of survival for cancer patients may increase and remissions and recurrence may be more frequent thus creating intervals which may be characterized as one of uncertainty of

outcome. This condition of uncertainty is stressful and shared by patients, their families and health personnel. Tiedt (1975) suggests that "regardless of the more optimistic prognosis of cancer, death as a possible outcome of the disease and anticipatory grief are present from the time of diagnosis" (p.264).

In one of the few studies found in the literature relating specifically to staff attitudes in the oncology setting, McKegney, Visco, Yates & Hughes (1979) suggest that while cancer patients' characteristics have been studied intensively, staff characteristics have been relatively ignored.

A number of studies have drawn attention to the ineptness of nurses in working with dying patients (Glaser & Strauss, 1965; Kubler-Ross, 1969; Quint, 1966a, 1966b, 1967). The demands made on nursing staff by this type of work has been identified as an important source of stress by such authors as Cox (1978), Denton & Wisenbaker (1977), Glaser & Strauss (1965), and Keck & Walther (1977).

Millerd (1977) suggests that dying patients are subjected to denial, avoidance, and isolation behaviors by the professionals involved in their care (p.34). However, further research is necessary to understand: 1) the sources of stress, 2) their relationships with a number of variables such as stage of disease, individual patient characteristics, work environments, the nurse's personal self-awareness status, and 3) the manifestation of stress and its effect on care of the

patient.

Scope and Objectives

In this study the author focused upon the investigation of stress among nurses who work exclusively with cancer patients and their families.

The specific research objectives were:

1. to empirically identify the stressors as perceived by nurses working with the cancer patients and their families;
2. to rank order the stressors as perceived by nurses working with the cancer patients and their families; and
3. to examine the relationship between the level of stress perceived by the nurses and selected personal characteristics such as: age, education, experience, marital status, religiosity and personal experience with cancer and loss. More specifically an attempt was made to identify the best predictors (demographic variables) of stress experienced by the nurse working in the oncology setting.

Need for the Study

A number of health care providers and consumers believe that the needs of the cancer patients and their families, particularly during the advanced stage and terminal phases of the disease, are not adequately met by the present conventional hospital system or wider health care system. Consequently alternatives such as, hospice units and programs, continuing care and supportive care units are being discussed. The largest single group of health care providers involved in the care of these patients and their

families are nurses. Fundamental to the foundation of this type of work is the need for an effective well structured support and communication system for staff (Lack, 1978; Vachon, 1978). However, as a prerequisite, there is a need to empirically analyse the source, nature and extent of stress experienced by the nursing staff (Hay & Oken, 1972; Michaels, 1971; Quint, 1969; Songstegard, Hansen, Zellman & Johnston, 1976; Vachon, Lyall & Freeman, 1978).

As stated by Huckabay and Jagla, "in addition to having adverse effects on the nurse's biophysiological and psychological systems, stress decreases efficiency, morale, and work performance, ultimately affecting patient care. Nursing administrators and supervisors have long recognized that this stress exists, but there has been a lack of empirical data to identify those stress-producing factors" (1979, p.21). Moreover, there is little evidence of research examining relationships between source and intensity of stress as perceived by nurses and their individual characteristics, such as age, education, experience and personal experience with cancer. One exception to this is the study done by Leatt and Schneck (1980), in which the relationships of age, experience and education of head nurses upon perceived frequency of occurrence of types of stress were examined (p.41). Only when the nature of stress is identified can nursing administrators and educators begin to develop strategies for helping nurses to cope more effectively with the stress.

CHAPTER 11

REVIEW OF THE LITERATURE

Any attempt to develop an instrument for the purpose of identifying and measuring sources of stress presupposes some familiarity with the basic nature of stress in general and in particular as it relates to the work environment. This chapter is intended as a selected review of the key concepts and issues related to stress theory. An understanding of the impact of the term "cancer", together with a working knowledge of previous research related to stress among nurses and more specifically in terms of caring for the terminally ill, is a helpful prerequisite to this study. Concepts related to "death" will also be explored. Finally, the conceptual scheme for this study will be presented in this chapter.

Stress - Conceptual Overview and Measurement

In more general terms the investigation of stress has received considerable attention from many disciplines including physiology (Selye, 1956), psychology (Lazarus, 1971), and social psychology (McGrath, 1976).

A number of conceptual frameworks and measurement instruments have been developed, yet considerable confusion regarding the concept remains. Mason (1975) suggests that this

confusion will not be resolved by critique, argument or logical analysis alone, but he makes a strong case for further systematic research which could increase the theoretical base upon which prevailing concepts are based.

The scope of this study does not permit an indepth review of the literature relating to stress theory, however, a statement regarding stress theory and research within a variety of disciplines is in order.

In spite of the widespread confusion surrounding the concept of "stress", it continues to be the subject of investigation for scientists of many disciplines. A number of authors express concern regarding the semantic confusion surrounding the term; for example, stress is utilized interchangeably with such terms as strain, anxiety, conflict, tension, frustration (Antonovsky, 1979; Mason, 1975; McGrath, 1976,).

Another problematic area relates to methodological difficulties inherent in the task of measuring such intangible processes as stress. Cassel (1974), suggests that to a larger extent difficulties with measurement are a result of "...inadequacies in our theoretical or conceptual framework" (p.471).

Guided by the physiological approach to the study of stress and disease as formulated by the work of Selye (1956) and Wolff (1953), more recent investigators have directed their attention to psychosocial processes and their relationship to stress (eg. Cassel, 1974; McGrath, 1976).

From a psycho-social perspective, there is an emerging consensus that the concept of stress is a transactional phenomenon based on an individual's perception, coping style and motivation to confront stressors (Cassel, 1974; Lazarus, 1966; McGrath, 1976).

Antonovsky (1979) explored the concept of stress from a "breakdown, or health ease/dis-ease dichotomy". The focus is on the "...continuum as a multifaceted state or condition of the human organism", rather than on the health-disease dichotomy (p. 64). A stressor was defined "... as a demand made by the internal or external environment of an organism that upsets its homeostasis, restoration of which depends on a nonautomatic and not readily available energy-expending action" (p.72). Antonovsky is also in agreement with other writers regarding the notion that a given phenomenon or stimulus becomes a stressor dependent on how the person perceives the experience and on the coping mechanisms available. While the stressor is the "load" placed on the individual, the response to the stressor is called "tension" which can be accompanied by negative, neutral and/or positive effects. Antonovsky further distinguishes between the states of tension and stress. He suggests that stress is a contributing factor in pathogenesis and represents the strain that remains within the person when the tension is not successfully managed. The process of dealing with the tension is called tension management and the outcome is dependent on the person, and his ability to resolve the problem and dissipate the

tension. Inadequate tension management, therefore, leads to a "state of stress and breakdown on the ease/dis-ease continuum (Antonovsky, 1979). Similarly, good tension management leads a person to the other end of the continuum, away from breakdown.

This leads to the question of vulnerability. Cassel (1974), proposes one explanation as to why one person is more vulnerable to a stressor than another. First, it is suggested that psycho-social processes (stressors) themselves are not etiologically specific for any given disease but rather that they act as conditional stressors, by increasing the susceptibility of the organism to direct noxious stimuli, i.e. disease agents. He states, "the clinical manifestations of this enhanced susceptibility will not be a function of the particular psycho-social stressor, but of the physicochemical or microbiologic disease agents harbored by the organism or to which the organism is exposed." (p.473). Secondly, Cassel suggests that some psycho-social processes may be envisioned as "...protective factors buffering or cushioning the individual from the physiologic or psychologic consequences of exposure to the stressor situation" (p. 478). He further postulates that common to both types of psycho-social processes (conditional stressors and protective factors), "...is the strength of the social supports provided by the primary groups of most importance to the individual" (p. 78). This factor may be particularly relevant to the present study.

Based on the assumption that stressors are ubiquitous in

human existence and that they are perceived and managed in a very individual and personalized manner, a number of authors have attempted to classify sources of stress (e.g., Kahn, Wolfe, Quinn, 1964; Holmes & Rahe, 1967; McGrath, 1976; Parad & Caplan, 1965). Of particular interest in this study is stress related to the workplace and more specifically to the oncology setting.

In order to focus more clearly on the oncological setting as a workplace, it is important to explore the impact of the term "cancer".

The Impact of the Term "Cancer"

The diagnosis or potential diagnosis of cancer is typically viewed by the individual as a stressful traumatic event (Hinton, 1973, Peck, 1972). Cancer statistics on mortality and morbidity only partially reflect the problem of cancer in our society. Inherent in the mere thought of cancer is the intense panic and anxiety, the role changes and conflicts, and the constant threat of death. The patient is faced with such threats as the loss of usefulness, loss of physical attractiveness, fear of pain, chronicity of disability and its implications (Donovan & Pierce, 1976, p. 3). Burkhalter (1978, p.18) suggests that cancer patients tend to have a unique status within society. A study done by Miller & Nygren (1978) indicates that cancer, as a chronic illness, with its associated problems and concerns requires additional coping mechanisms (p. 302).

Abram (1972) suggests that patients suffering from chronic

illness utilize a variety of psychological responses such as regression, denial, and intellectualization, as well as projection, displacement and introjection, in order to handle the anxiety associated with the illness. Staff reactions of overconcern and involvement, anger and rejection and lack of sensitivity were identified as negative forces in helping a patient adjust to his illness. The meaning of cancer and the tremendous emotional conflicts that it evokes is not much different for the family of the cancer patient or for the health professionals involved in their care (Donovan & Pierce, 1976). Overwhelming loss is one of the most significant characteristic experienced by cancer patients, their families, and the health profesionals involved (Barckley, 1978, p.157). Burkhalter (1978) suggests that the "intellectual acknowledgement by family, friends, and co-workers that cancer is a tragic illness and is often fatal can become clouded by the emotionally based fears of cancer that reside in each person" (p. 18). She further indicates that there are two prevailing attitudes towards cancer; fear and challenge. With regards to the first, fear has contributed positively, for example, by increasing public awareness that early screening and detection of cancer is possible. Conversely, fear can also act as a motivating stimulus to delay medical attention. The second attitude described by the word "challenge" is readily seen in the priority of cancer research and the crusade of fighting cancer (p. 18, 19).

Another perspective on the problem is to look at the

attitudes toward cancer and the cancer patient as reflected in the cancer myths that are still very much part of our society's belief systems. Nurses as members of our society are not exempt from these beliefs. Perhaps these unfounded beliefs contribute significantly to the negative and ambivalent feelings as well as to the stress experienced by nurses working with cancer patients. Burkhalter (1978) discusses several cancer myths including: 1) cancer being contagious, 2) uncontrollable pain, 3) hidden cures, 4) long, expensive treatment, and 5) mutilation.

Attention is now turned to a review of the research and literature specific to stress among nurses in the hospital environment. More specifically a brief review of the approaches to defining and measuring stress experienced by the nurses in critical care areas will be presented. Finally, a review of the literature and research specific to death and dying and the care of the terminally ill will be explored.

Stress Among Nurses in the Hospital Environment

It has been suggested that hospitals in general, are a stressful work environment. At times, the tasks of the nurse may be considered distasteful and frightening, and may evoke strong and mixed emotions (Michaels, 1971).

One author suggests that nurses experience stress "... as a continuing condition in their lives by virtue of their choice of profession (Hartel, 1979, p.92). Hartel further delineates a

number of perceived dangers (sources of stress) from two perspectives; first, there are stresses on the job that relate to patient care, the medical hierarchy, workload and ethical issues on an ongoing basis, as well as stresses which relate to recent events such as new policies, new medical staff, and organizational changes. Secondly, a number of potential stresses relating to life away from the job are identified such as: death in a family, illness, marriage, family responsibilities, and financial problems (p.93).

In a more recent study, Leatt and Schneck (1980), identified five types of stress for headnurses working in nine specialties: pediatrics, obstetrics, medicine, surgery, rural, auxiliary, psychiatry, rehabilitation and intensive care. The five types of stress related to: administrative work, type of patients, task ambiguity, staffing problems, and physician contact (p.31). Pinnell (1979), in yet another part of the same study identified four stress factors for hospital nursing staff which related to patients, physicians, workload, and relieving on other nursing units (p.105).

Stress in Critical Care Areas

A number of authors have attempted to identify the sources of stress experienced by nurses, especially for those working in critical care units. Some of their findings are relevant to this study and thus will be briefly summarized. Stress factors mentioned by Hay and Oken (1972) included: the work environment,

workload, complex technology, staff interpersonal conflicts, communication with families, and proximity to death. Vreeland and Ellis (1969) mentioned the feelings of inadequacy regarding the nurse's knowledge and skill requirements, conflicts with physicians and families, and the need to perform pain-inflicting procedures. Bilodeau (1973) summarized the sources of stress into 5 categories: 1) the patient and his care, 2) personnel, 3) environment, 4) families, and 5) others. In another study, West (1975) classified the stress experienced by staff according to primary and secondary stress. More specifically he suggested that primary stress results from three areas: the repetitive exposure to suffering, death and dying; the constant threat of object loss; and the feelings of personal failure. For secondary stress he suggested work overload, lack of gratification, and communication problems. In a more recent article Huckabay and Jagla (1979) classified the stressors into four major categories relating to interpersonal communication problems, knowledge base, environmental, and patient care, and further extrapolated sixteen components of possible stressors from the four main categories to provide a rather comprehensive classification. From this brief review of the literature it was noted that the proximity to death and dying was a recurrent theme mentioned as a stressor to nurses.

Stress and the Care of the Terminally Ill

Holsclaw (1965) hypothesized that certain areas of nursing carry a higher emotional risk factor than others. Specifically she suggested the following areas: patients undergoing surgery with high mortality risk, patients subjected to experimental therapies such as chemotherapy, severely handicapped patients, those requiring rehabilitation, psychiatric patients, as well as the terminally ill and critically ill patients. Again the common denominator proposed amongst these areas was the probable death of the patient or his permanent disability.

Holsclaw suggested that "a patient's death is the most direct affront to our restorative self-esteem" (1954, p.41). Similarly Vachon (1976) suggested that the nurses' struggle is for a life that has become meaningful to her in a personal manner (Vachon, 1976).

Craytor (1978) reported in her study that nurses working on medical units seemed distressed by the fact that many cancer patients die, that others present many complex problems not readily responsive to nursing interventions and that they were often witness to many painful procedures and suffering. The nurses expressed feelings of helplessness (p. 212). In one study interviews were conducted with more than 200 nurses in order to determine how they felt when patients suffer. Such feelings as compassion, anger, sympathy, dislike, apathy and satisfaction were described. The authors also explored how the nurses' feelings had changed in their response to patients who were

suffering in relation to: 1) their shift from school to practice, 2) differences in their reactions to different types of patients (e.g., age, nature of illness), 3) the complaining patient, and 4) dealing with emotional problems. The problems of over involvement with patients and the encounters with death and dying were also explored. Clearly, the nurses' reactions in terms of their proximity to death and dying elicited the strongest emotional response. The nurses were very concerned regarding the dangers and consequences of over involvement with the patients. Emotional distancing was described as the most common coping mechanism (Davitz & Davitz, 1975). Valentine (1978) suggested that "there is a fine line between optimal involvement and the distance necessary to protect our own sanity" (p. 389). Although nurses have been concerned with this issue for a long time, Davitz (1975) suggested that the relationship between emotional distance and nursing effectiveness should be explored. He further questioned whether the nurse's sense of sympathetic involvement with patients is a condition of effective nursing care and whether the structure of the hospital unit and tone of staff interpersonal relationships affects the individual nurse's relationship with patients (p. 1510).

Millerd (1977) suggested that nurses and physicians in a very real sense are survivors of events in which they witness the death of many people. She further postulated that "one should be able to identify those distinctive characteristics and attitudes of survivors about death present in health professionals,

specifically doctors and nurses" (p. 34). Reference was made to Liftons' survival syndrome phenomena which delineates five characteristics peculiar to survivors: death imprint, death guilt, psychic numbing, counterfeit nurturance and contagion anxiety and formulation. These characteristics were compared to Kubler - Ross' five stages of psychological adjustment in terms of being a process whereby it is hoped the person will work through each stage to successful adjustment. Millerd made some observation of the health professional and dying person interaction in relation to the survivor syndrome. In the first instance it is not unreasonable that a nurse or physician experience a death imprint when confronted with frequent deaths of patients; that is, the nurse "... is made aware of the experience of death rather than just the fact. This experience occurs in relationship to self rather than others" (p.34). This leads to a great degree of anxiety and is often reflected in simple avoidance of the anxiety-provoking situation - the dying patient. This phenomenon has been well documented in the literature (Glaser & Strauss, 1965; Kubler-Ross, 1969; Quint, 1966; Sudnow, 1967). Secondly, death guilt is experienced in several ways by health profesionals and a sense of personal inadequacy is frequently experienced and at the same time a sense of relief is felt that it was the patient who died, not them personally. As a result "... vague diffuse feelings of guilt at the patient's death are often experienced by the health professionals" (Millerd, 1977, p.35). In another study Price and

Bergen (1977) described the conflicting feelings that nurses have in relation to "not being able to do more", that is, feelings of inadequacy and helplessness and those of "doing too much" which threatens the nurses' ability of her feelings of humanity and reality (p.232). Thirdly, psychic numbing may well result as a defence mechanism against the death anxiety experienced. Fourthly, when physicians and nurses exhibit a paranoid type of behavior such as anger, blaming others, and reflecting a sense of helplessness they may be manifesting counterfeit nurturance and contagion anxiety. And finally once the health professional has begun to contemplate death for the self thus altering or strengthening his identity, he has successfully reached the stage of formulation.

In one study Vachon (1976) found that nurses reported equal difficulty with staff communication as with watching patients suffer and die. She further suggested that the nurses appeared to focus on the problems of caring for the dying patient almost as a displacement of more basic concerns such as the fears and problems presented by the dying patient and the nurses personal death concerns. As supported by several studies mentioned earlier, interpersonal conflicts was mentioned frequently as a stressor. Vachon suggested that, perhaps focusing on staff conflicts was less threatening than exploring one's personal death awareness and that some dissension amongst the health team was inevitable due to conflicting opinions regarding patient care. The nurses also reported that their major difficulty was

in dealing with patients' feelings about illness, prognosis and death, especially when patients verbalized their feelings and also when they were on the research units.

Interesting findings were revealed in a study conducted at the Palliative Care Unit (P.C.U.) of the Royal Victoria Hospital in Montreal. The level of stress experienced by nursing staff in the P.C.U. measured by the Goldberg questionnaire (Goldberg, 1972), was twice as high as the average for nurses working on other units, measured at the same time. This suggests that close proximity to many dying patients is a very potential high risk area and primary cause of staff stress. It is also interesting to note that in that study, sources of stress such as: 1) interpersonal problems among staff, 2) lack of support from other staff members, 3) sense of personal inadequacy, and 4) role ambiguity declined over time (i.e. length of time nurses worked with dying patients). However, other sources of stress such as: 1) facing death of a patient, 2) difficulty dealing with families, and 3) watching patients suffer remained rather steady (P.C.U. Report 1976).

In another paper Vachon (1978b) suggested that the motivation of the staff member to work with dying patients can affect the job stress they encounter. Six reasons were identified: 1) accident, convenience, or a part of one's caseload, 2) a desire to do the "in thing" or to affiliate with a charismatic leader, 3) intellectual appeal, that is, the desire for control and mastery over illness, pain, and death, 4) a sense

of "calling" in religious or humanistic terms, 5) previous personal experience either oneself or with those close to him or her, and 6) the suspicion that one will someday develop the disease. The paper explored how each motivation may lead to particular forms of stress.

Other factors that perpetuate stress are related to general advances in medical technology. As a result of increased knowledge, new drugs, and more sophisticated technology, the dying process is prolonged. During this process, helping individuals and their families becomes extremely difficult. Consumer, as well as nurses' professional role expectations, also create pressure and often contribute to our sense of personal inadequacy (Vachon, 1976). As stated by Holsclaw (1965), we are a very cure-oriented society and although nurses claim to be more care-oriented we, nevertheless, identify with the medical model in restoring the patient to health.

In yet another approach to thanatology research Folta suggested that fundamental to dealing with staff stress is the need to understand how death is perceived by nurses. In one study she utilized 1) a perceived dimensions measure (semantic differential); 2) an anxiety (Guttman) scale; and 3) a sacred-secular (Guttman) scale. The sacred-secular scale referred to "... a spiritual-temporal continuum of attitudes towards death. That is, those who are high on the 'sacred' end of the continuum see death as a supernaturally controlled phenomenon, while those who are 'secular' perceive death as a

natural phenomenon, not subject to the control of a supernatural power" (p.233). The study sample consisted of all nursing staff in a university hospital, a religious general hospital, and a public general hospital. The results indicated no significant difference in perception of anxiety amongst the nursing population of the three hospitals. However, there was a significant relationship between anxiety and the position of the nurse within a hospital. The findings indicated that the registered staff nurses in all hospitals had higher anxiety levels than those involved in administration, practical nurses, and attendants. Folta speculated that the enforced proximity of nurses to the reality of death and dying and the self-selection processes operating whereby individuals with high anxiety are more likely to work in the healing professions, accounts for the significant findings. The study reported that most nurses viewed death as peaceful, controlled, predictable, and a common phenomenon, as well as, seen as a natural termination of the life process. However, death was perceived with a high degree of anxiety. It is suggested that these seemingly contradictory findings may be due to the fact "that the response to the semantic factors measure the orientation to death - the act, while the anxiety scale measures death - the process, and the sacred-secular scale measures death - the aftermath. Or, in other words, perhaps the factors are measuring death - the abstract concept, while the anxiety scale is measuring death - the personal threat, and the sacred-secular scale is measuring

death as a metaphysical phenomenon registering either the end or the beginning" (p. 235).

Gow and Williams (1977) replicated Folta's study with some modifications. Whereas Folta's study looked at differences in attitudes of nurses within similar agencies, this study examined differences in the attitudes of nurses who worked in markedly different settings. The study sample (n = 235) consisted of nurses working in community agencies, acute hospitals, and chronic facilties. A cluster sampling procedure was utilized whereby the total population of staff nurses were included from the smaller agencies and varying sampling fractions from the larger agencies. The focus was upon the effects of three sets of variables: 1) the type of agency, 2) the experiences of nurses in caring for the dying, and 3) their demographic characteristics, upon nurses' anxieties and attitudes toward death and dying. Analysis of the experiences of nurses in caring for the dying included: frequency of contact with dying patients, the age of the dying patients, and whether the nurses' work experience with dying patients and their families was viewed as rewarding, challenging or frustrating. The demographic characteristics included in the study were: level of education, age of the nurse, family status, and religious affiliation. The results suggest that the type of nursing agency had minimal independent bearing on the nurses' perception of death and dying and rather that the personal experiences and attitudes of nurses primarily determine their attitudes toward the subject. The

generalizability of this study is questionable due to the low response rate (15 to 31 per cent) in one of the work environments. Similarly Quint (1966) suggested that dying is a social experience as well as biological, and that nurses must recognize that their personal concept and feelings about death influences their practice. Huckabay and Jagla (1979) also suggested that "the degree of the manifestations of stress depends on the individual's coping and adaptive mechanisms" (p. 22). Knowledge about the stress-producing situation and control over the situation were recognized as part of the coping mechanism in this paper.

Constructs Related to the Concept of Loss

Although death is not the only outcome of the diagnosis of cancer the related concept of loss seems to be experienced throughout the experience. Exact definitions of loss or dying are not readily found, however, a number of constructs have been used to help clarify the phenomenon. Specifically, the constructs of death trajectory, certainty and time of death, awareness context, consequential losses, stages of adjustment in dying, will be discussed in this chapter.

Glaser and Strauss (1968) described the dying trajectory as a succession of "transitional statuses" in the status passage between life and death. Interpreting dying as a temporal process implies that dying is a social as well as a biological and psychological process. The dying person is part of a society,

with family and friends and who also interacts with health professionals. It is important to note that the dying trajectories themselves, are perceived courses of dying rather than the actual course. In addition, they have two significant properties: they take place over time, thus have "duration" and also have a "shape". The many possible combinations of duration and shape give rise to multiple types of dying trajectories (e.g. lingering death, expected swift death). However, regardless of the specific trajectory experienced by the patient, "critical junctures" occur along the dying trajectory moving the person from a state of being to nonbeing; these are:

1. The patient is defined as dying.
2. Staff and family then make preparation for his death, as he may do himself if he knows he is dying.
3. At some point, there seems to be "nothing more to do" to prevent death.
4. The final descent may take weeks, or days, or merely hours, ending in
5. the "last hours",
6. the death watch, and
7. the death itself (p.7).

An important determinant of the quality of interaction amongst the patient, family and health professionals is the expectations of death in relation to "certainty and time". Glaser and Strauss (1968) define certainty of death as"... the degree to which the defining person (physician, nurse, or even the patient himself) is convinced that the patient will die." And secondly, time of death is either "a) when the certain death will occur, or b) when the uncertainty about death will be

resolved" (p.8). Certainty and time in combination yield four types of "death expectations" which define the patient's transitional status passage from living to dead:

1) certain death at a known time,
2) certain death at an unknown time,
3) uncertain death but a known time when certainty will be established, and
4) uncertain death and an unknown time when the question will be resolved (p.8).

These expectations appear to affect interactions between the dying person, his family and health professionals in a very significant manner. Although physicians usually assume formal responsibility for defining the patient's condition, i.e. certainty and time of death, nurses must also assess the patient's illness status through such cues as the patients' physical condition and the temporal references made by the health team. Physical cues are more obvious and range from signs that spell hope to those that indicate immediate death. On the other hand, temporal cues are less obvious and refer to the patient's status movement as measured against the typical progression of the disease (i.e. he is "going fast" or lingering"). When physical cues are absent, temporal cues are rather indeterminate, thus, the nurse concludes that the patient will die "sometime" or "at any time" (p. 10).

Another seemingly powerful variable in dealing with a terminally ill patient is the "awareness context". Assuming the combination of two interactants (the patient and hospital staff), Glaser and Strauss (1965) defined the following types of

awareness context:

1) closed awareness (patient does not recognize his impending death even though the hospital personnel have the information) (p. 29);
2) suspicion awareness (staff are aware that the patient suspects, however they continue to try and negate his suspicion) (p 47);
3) mutual pretense (both staff and patient know of impending death yet both chose to pretend otherwise) (p. 64); and
4) open awareness (both staff and patient know of impending death and acknowledge it) (p. 79).

In yet another article Glaser and Strauss (1964) discuss three types of losses experienced by nurses when a patient dies:

1) personal loss (happens to the degree that the nurse becomes very personally involved with the patient and his family),
2) work loss (refers to working very hard at saving the life yet patient dies); and
3) social loss (depends on perceived social value of the patient). Age is deemed as the single most important characteristic in establishing social loss (p. 119-121).

Rosillo, Welty and Graham (1973) classified the potential losses or stresses experienced by cancer patients as follows:

1) Those induced by the disease itself, such as: loss of health; feeling of shame, punishment, or retribution, and feelings of loss of control and impending death.
2) Those related to the therapy, such as: fear of injury and mutiliation, pain, change in appearance.
3) Those related to the hospitalization, such as impairment in: relationships with family, friends, and usual surroundings, employment, many pleasures, and identity (p. 153-158).

Barckley (1973) suggested that the cancer patient experiences many crises. The skilled nurse requires an understanding of the changing needs of the patient and his family at various stages of the disease. A sense of timing is necessary, believing that "to everything there is a season". For

example, there is a time for expression of despair and anger by the patient, a time for teaching and learning and a time for supporting the family (p. 49-53). Donovan and Pierce (1976) classified the impact of the diagnosis of cancer into 5 crises:

1) fear of the meaning of the symptoms,
2) diagnosis,
3) treatment,
4) metastasis, and
5) dying (p. 8).

Abrams (1966) suggested that the cancer patient develops a definite pattern of communication with health professionals and significant others, and that this pattern changes in three different stages of the disease - initial, advancing and terminal. The concern is not with what health profesionals should say but rather with what the patient's needs are at different stages of his illness. An understanding of the changing patterns of communication would assist the professional in diminishing his own anxieties and in managing the patient. Abrams' findings revealed that in the initial stage patients talked freely, honestly and repeatedly about their diagnosis with physicians and significant others. There was an air of optimism and willingness to be a partner in treatment. In the advancing stage hope lessened and fear increased, and faith in physicians turned to fear of abandonment. And finally in the terminal stage, silence became more prevalent and the fear of being alone was most significant (p. 317-322).

Upon learning of a diagnosis of cancer with a potential fatal outcome or imminent loss a person may begin to grieve in

anticipation of the loss. Kubler-Ross (1969) describes five stages of psychological adjustments to loss:

1) shock, disbelief and denial;

2) anger;

3) bargaining, attempts to postpone the inevitable;

4) sense of great loss and accompanying depression; and

5) acceptance.

It is also believed that nurses working with these patients experience the same phenomenon. Similarly, Engel's (1964) model of adaptation to loss conceptualizes well the psychodynamic experience of the cancer patient:

1) disbelief (avoidance, suppression, denial);

2) developing awareness (anger, shame, guilt);

3) reorganization (dependency, aggression); and

4) resolution (positive adjustment to illness) (p. 93-98).

In summary then, while the "death trajectory" refers to the style of dying and the probable "certainty and time" of death, the "awareness context" refers to the tone of interactions between the patient and the staff. The losses refer to the consequences for the patient and the nurse while the stages of adjustment describes the behavior of patients in relation to their experience as well as provide insight into the character of staff behavior.

Conclusions from the Literature

From this review of the literature it is evident that the concept of death and dying as it relates to stress experienced by nurses working with cancer patients is a very complex multi-faceted phenomenon. Furthermore, stress is a profoundly personal experience.

A number of classifications of sources of stress were delineated by various authors such as 1) job versus away from work stress, 2) recent versus ongoing stress 3) primary, which relates to patient care and the self, versus secondary stress, encompassing interpersonal conflicts and the work environement. In addition, other categories of sources of stress were described and combined in various frameworks. Specifically, they were sources of stress related to: families, suffering, death-loss, feelings of inadequacy, role ambiguity, task ambiguity, knowledge base, and technology. Throughout the literature, the proximity to death as a source of stress prevailed.

Although loss and dying, in its meaning and effect, is as specific and individual as the person who experiences it, there are a number of constructs which help to clarify the phenomenon from a general perspective. Glaser and Strauss (1968), suggested that the experience of dying is shaped by the individual's personal history of illness, his characteristic response to stress and coping strategies, the specific nature of the terminal illness, and the tone of interactions he has with others during

the dying experience. In an attempt to define dying, a succession of "transitional statuses" referred to as "death trajectories" have been described. These perceived courses of dying take place over time, thus have "duration" and also have a "shape". The experience of loss (Engel, 1964); reaction to a cancer diagnosis (Barckley, 1973; Donovan & Pierce, 1976; Glaser & Strauss, 1964; Rosillo, Welty & Graham, 1973), and to dying, (Kubler-Ross, 1969), have been examined rather extensively and reported in the literature. It is important to note that these stages of adjustment (i.e., to loss, cancer diagnosis and dying), have been concluded from observation studies and individual interviewers making value judgements. This methodology raises many questions related to the reliability and validity of the conclusions derived from this type of research. Despite these shortcomings, there seems to be some concensus amongst both theorists and researchers, regarding the psychological stages related to the experience of loss, cancer diagnosis and dying.

Interaction between staff and patients who are experiencing significant losses or dying, can become strained. A number of constructs have been identified which influence the quality of interaction amongst patients, family and health professionals: 1) the expectation of death in relation to "certainty and time" (Glaser & Strauss, 1968), 2) the awareness context which refers to how the interacting persons define both themselves and others as interactants (Glaser & Strauss, 1965), and 3) social losses, described in terms of person, work and/or social worth (Glaser &

Strauss, 1964).

The notion of individual differences and their relationship to the manifestation of stress was often alluded to in the stess literature, however, little empirical research on these variables was documented.

Conceptual Scheme for this Study.

For purposes of this research, the perspective of Antonovsky (1979) was followed. Stress was defined as the nurses' response to stressors comprising of both physiological and psychosocial reactions (Rabkin, 1976, p.1013). Or, put another way, stress is "... that physical and emotional experience which results from a requirement to change from the condition of the moment to any other condition" (Harth, 1979, p.61). It is emphasized that stress was viewed as a personal experience and present depending "... both on the meaning of the stimulus to the person and on the repertoire of readily available, automatic homeostasis-restoring mechanisms available" (Antonovsky, 1979, p.72). Bates and Moore, in their study of stress in hospital personnel suggested that "stress is the result of the interaction of an individual's personal qualities with the situations in which the individual finds himself. Stress levels were, therefore, conceptualized as resulting from a combination of the individual's ability to cope and the difficulty of the situation itself" (1975, p.765).

Also, pertinent to this study was the concept that the energy required for tension management is finite and unless it is

replenished regularly the supply becomes exhausted. Selye warned that, "after a lifetime of constant expenditure, even our last investment will be eventually exhausted if we only spend and never earn" (1956). The term "burnout" has been coined to describe the consequences of overload by such authors as Kramer (1974), Maslach (1976), Veninga (1977), Shubin (1978), and Storlie (1979). According to Maslach "burnout involves the loss of concern for the people with whom one is working" (1979, p. 113). Although burnout may be manifested in a variety of ways, Patrick (1979), suggests that "... it has basic consistently identifiable elements: emotional exhaustion, shift toward negative attitudes, and sense of personal devaluation that occurs over time in response to continuous work-related stress" (p.87). The syndrome not only hurts the individual concerned but also plays a primary role in the poor delivery of health and social services to people in need of them. Although the manifestation of stress and the concept of burnout is pertinent to the topic, the scope of this study did not encompass the subject other than to recognize it as a consequence of inadequate tension management.

Similarly, due to the limitations of this study an attempt to measure the nurses' personal death awareness, death anxiety level, effects of stress on nursing performance as well as coping strategies has not been possible. However, these factors must be considered in interpreting any results and should be the focus for future research.

Although the use of self-reporting of nurses' perception of stress may be open to considerable measurement error, it was assumed that a survey of responses of nurses' perceptions can provide a reliable and somewhat useful measure. How individuals perceive and experience reality is a function of our attitudes. Therefore, as suggested by Selye, a person can "convert a negative stress into a positive one (or) 'eustress'" by reforming attitudes toward either specific events or ongoing conditions (Selye, 1978, p.63). The use of this methodology may have indeed provided the respondent with an opportunity to clarify their feelings regarding many situational realities and in turn an opportunity to change their attitudes.

Based on this selected review of the literature and the authors experience, the sources of stress for nurses working with cancer patients and their families was examined according to two phases of the oncology experience: 1) active treatment phase (diagnostic period, initial therapy and treatment during recurrent and advancing disease) and 2) palliative treatment phase. The potential sources of stress were classified a priori into two main categories with sub-groups described as:

1) Primary Stress
   a) stress related to the patient and his care,
   b) stress related to personal awareness (nurse), and
2) Secondary stress
   c) stress related to interpersonal relations,
   d) stress related to the work environment.

Since the study was exploratory in nature, it was thought that these four broad categories could encompass the majority of types of situational stress. In addition, for each category the constructs of awareness, style of dying, certainty and time, loss, and adjustment were incorporated as they applied.

CHAPTER 111

DESCRPTION OF SETTING, POPULATION, AND METHODOLOGY

This chapter deals with a description of the setting and the population from which the data were obtained. In addition, the instrument used for measurement of stress and other variables, and the methods employed in data collection and data analysis are discussed.

The Setting

The Cross Cancer Institute is a comprehensive cancer treatment center located in Edmonton, Alberta. The Institute offers a full range of diagnostic services, as well as specialized treatment in radiotherapy, chemotherapy, and immunotherapy. Surgical removal of the cancer is performed in general hospitals throughout the province. Based on pre-treatment evaluation, the individual may be treated by one modality or by a combination of methods. Investigation and treatment is provided in day care, outpatient, and in the inpatient units.

In 1941, the Minister of Health at that time, Dr. W. W. Cross, introduced co-ordinated cancer services under the provincial Department of Health. The first services provided included diagnosis following referral and some financial

assistance during treatment. Clinics were established in Edmonton, Calgary and Lethbridge, Alberta.

In 1967, under the Cancer Treatment and Prevention Act, the Provincial Cancer Hospitals Board was created. This Board is composed of representatives from all across Alberta and is responsible for the cancer care program throughout the province.

The present building (Cross Cancer Institute) was opened in 1968 with the Outpatient Department opening first and a few months later, the first inpatients were admitted. Recognizing that good care for cancer patients can only develop against a background of research and education, the Institute became a teaching hospital of the University of Alberta in 1974. Research programs and patient services within the Institute have developed in a co-ordinated fashion with the University of Alberta Hospital and the other teaching hospitals throughout the city. The Division of Oncology, within the Faculty of Medicine, co-ordinates the teaching and training of medical students related to cancer. Nuclear Medicine technologists, students of Nursing and Radiotherapy technologists receive part or all of their training within the Cross Institute. In addition, educational resources are provided to many other members of the health disciplines and to the public.

Research is an integral part of life at the Institute. In addition to local research projects, several are organized in conjunction with national and international bodies including the National Cancer Institute of Canada and of the United States and

the European Organization for Research and Treatment of Cancer.

In the Cross Cancer Institute all patients have cancer and the focus is on active treatment aimed at cure or control of the disease. The treatment modalities include aggressive treatment often causing severe side effects, as well as experimental therapies (chemotherapy, radiation). In this setting very often the staff as a team will share the event with the patient and his family from the time of diagnosis to death. That is, the staff will share the patients' trauma of the initial diagnosis; the process of decision-making in regards to treatment and assist the patient to cope with side effects; may rejoice because of a remission then share in their despair upon a recurrence; and eventually concentrate on symptom control and accepting the reality of death.

The Population

The subjects for this study included the entire population of nursing staff working at the Institute. The criteria for inclusion of nursing staff in the study were: 1) consent from the nursing staff to participate, 2) nursing staff to include registered nurses (R.N.'s), registered nursing aides (R.N.A.'s), and orderlies (R.N.O.'s), and 3) nursing staff on either full or part-time staff status.

Out of a potential 95 respondents, 87 staff members participated in the study (a response rate of 91.5 per cent). Of the total, 95.4 per cent were female (n = 83).

Area of Nursing

Comprising these respondents, were 55 nurses (63.2 per cent) employed on the inpatient nursing units, 10 (11.5 per cent) in the out-patient department, 12 (13.8 per cent) in a supervisory-administrative position, and 10 (11.5 per cent) in a category including clinical research, education and social service.

Education

With regard to the levels of educational preparation, only 11.5 per cent of the nurses have a university degree, including 2.3 per cent who have a post-graduate clinical nursing course in addition to a Bachelor's Degree. The majority of respondents (79.3 per cent) had registered nurse, diploma level education. The remaining population (9.2 per cent) were educated at the certified nursing aide/orderly level.

Age

In terms of age, 47.7 per cent of the respondents were between 20 to 30 years of age, 32.6 per cent were between the age of 31 and 40, 14 per cent were between 41 and 50 years of age, and the remainder (5.8 per cent) were over the age of 51.

Experience

Length of experience, was examined for both, length of experience in nursing (years) and specifically, length of experience at the Institute (months). In the first instance, the largest group of respondents (67.8 per cent) had in excess of six years of nursing experience, 25.3 per cent recorded two to five

years nursing experience, and 6.9 per cent had one year or less of experience. Secondly, more than two-thirds (67.4 per cent) of the staff had worked at the Institute for more than nineteen months, 22.1 per cent had been on staff between seven and eighteen months, and 10.5 per cent of the respondents had worked at the Institute less than six months.

Marital Status

With reference to marital status,69 percent were married, 4.6 per cent recorded that they were living with a significant other, 19.5 had never married, and 9.2 had been separated, divorced or widowed.

Religion

The religious affiliation of this population comprised of the following: Protestants - 62.1 per cent, Roman Catholics - 28.7 per cent, Other - 3.4 per cent and 5.7 per cent reported 'no religious affiliation'.

Personal Experience with Cancer and Death

Other personal variables of interest included the respondents personal experience with cancer and death of significant other(s). Nearly six per cent of the respondents personally have had or had cancer. In addition, 72.4 per cent recorded that a member of their family have had cancer, (of those, 43 per cent were diagnosed within the past two years). Vachon (1978b) suggested that the nurses' previous personal experience with cancer may be a form of motivation for working in the oncological setting. Comparable statistics describing this

personal variable amongst nurses in other oncological settings was not found in the literature, therefore, interpretation of the relevance of these findings was not possible. However, this question is worthy of further inquiry. In terms of death in the family, 71.3 per cent recorded that there had been a death in their family (of those, 43.5 per cent had occurred within the past two years).

Work Experience with Dying and Death of a Patient

In their work setting, 47.1 per cent of the respondents reported that they deal with terminally ill patients on a daily basis, 26.4 per cent reported contact with a terminally ill patient once per week, 17.2 per cent indicated the frequency of their contact to be two to three times per month, and the remaining 9.1 per cent recorded contact once per month or less.

Similarly, in the work setting,23 per cent of the respondents recorded that they encountered the death of a patient with whom they have had contact at least once per week. The second largest group reported that they encountered the death of a patient two to three times per month (46 per cent) and 12.6 per cent reported that experience with the death of a patient occurred once per month. The remaining 18.5 per cent indicated that their encounters with death occurred less than once per month. However, it is interesting to note that at the time of data collection 87.4 per cent reported that they had encountered the death of a patient within the past month, and further, that

of those respondents, 30.2 per cent had encountered the death of a patient within the past two days.

Professional Judgement and Confidence

In terms of how the respondents perceived the extent of care required by the terminally ill and the staff members' level of confidence in providing that care, an overwhelming majority (81.6 per cent) recorded that the requests for nursing care of most patients receiving palliative treatment and diagnosed as terminally ill, as compared to patients being actively treated for cancer, was "somewhat more to much more" care. Whereas 91.9 per cent reported that they at least felt mostly confident in their ability to provide technical care for the terminally ill patients, only 57.4 per cent reported confidence at the same level in regards to their ability to manage the psychological needs of terminally ill patients. At the time of the study, 52.9 per cent recorded that overall they were "satisfied" with their kind of work, and 17.2 per cent were "strongly satisfied" with their work.

Personal Death Awareness and Belief Orientation

Another group of questions dealt with the individuals personal death awareness and their belief orientation. For example, 57.5 per cent, reported that they have come to terms with their own mortality. Only 16.1 per cent had ever experienced a real personal death threat. The frequency of

thinking about their own death was reported as "occasional" by 60.9 per cent and "frequently" by 10.3 per cent.

In terms of factors which most influenced the respondents present attitude about death, at least 50 per cent reported " the death of someone close" and "religious upbringing". For 58.6 per cent of the respondents death meant "being with God" and also for 54 per cent it meant "an ending of earthly life but with continual individual existence". In a related question, 72.4 per cent reported that they believe in life after death. In terms of religious practices, 59.8 per cent perceived themselves as at least moderately religious, 42.5 per cent attended church occasionally, and an additional 39.1 per cent attended frequently to very frequently.

When asked to select characteristics of their personal beliefs and practices, "regular efforts to relate to other people in a moral way that is consistent with my faith" and "an ability to draw strength from my faith when things are going wrong" were most frequently chosen (nearly 60 per cent).

Supplementary tables summarizing a breakdown of participants by these personal variables is shown in Appendix A.

The Instrument and Measurement

Data were collected by means of a questionnaire. The questionnaire consisted of two parts: the first dealt with the respondents' perception of the amount of stress and frequency of occurrence of the stress as represented by the items. Part two collected the other personal data.

Questionnaire - Part 1

The first step in designing the instrument was to develop a pool of potential stress items representative of the type of stress under study. It was important that there be a logical explanation for the presence of every item in the questionnaire. Accordingly, based on a selected review of the literature and the author's experience, the potential sources of stress for nursing staff working with cancer patients and their families were examined according to the following phases of the oncological experience: 1) active treatment phase (diagnostic period, initial therapy and treatment during recurrent and advancing disease) and 2) palliative treatment phase. The potential sources of stress were classified into two main categories with sub-groups described as:

1) Primary Stress
    a) stress related to the Patient and his care,
    b) stress related to Personal Awareness (nurse), and
2) Secondary Stress

c) stress related to Interpersonal Relations and

d) stress related to the Work Environment

For each category the constructs of awareness, style of dying, certainty and time, loss, and adjustment were incorporated as they applied. A pool of 80 items were developed utilizing a "situational" format.[1] That is, for each item the respondents were asked to indicate how stressful each situation was perceived to be, by answering "almost no stress", "very little stress", "some stress","quite a bit of stress", or "very much stress", and to indicate how often the situation occurred in their work, by answering "never", "rarely", "sometimes", "often", or "always"[2].

The draft questionnaire was studied by and utilized as a teaching tool by a group of 60 nurses in the post-basic Nursing Degree Program, University of Alberta. While this evaluation was not formalized, the procedure did provide some helpful feedback with regard to the face validity and clarity of the proposed stress items. In addition the items were scrutinized for content validity by a group of judges which included nurses, social workers and individuals working in pastoral services (n = 12). The judges provided feedback regarding the representativeness of items, accuracy, and clarity.

After dropping some questionable items and rewriting others for purposes of clarity, 72 items were selected to form part one of the questionnaire. The questionnaire is shown in the Appendix B.

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1 Some of the items were modified from the questionnaire developed by Leatt, P., & Schneck, R. Difference in stress perceived by headnurses across nursing specialties in hospitals. Journal of Advanced Nursing, 1980, 5, 31-46.

2 The scale was modified from the original questionnaire developed by Overton, P., & Schneck, R. An Inquiry into the Relationships among Environment, Technology, Structure, Process and Behaviour Within Nursing Subunits. (Working Paper), Edmonton: University of Alberta, 1976.

Questionnaire - Part 11

Part two of the questionnaire collected information about the respondents.

The length of experience at the Cross Cancer Institute was reported in months (Item 73), however, in the analysis the length of time was categorized into 3 parts: 1 to 6 months, 7 to 18 months, and more than 19 months. Similarly the length of total nursing experience was reported in years (Item 74), and categorized into 3 parts: 1 year or less, 2 to 5 years, and more than 6 years.

The areas of nursing (Item 75) were designated as nursing units, out-patient department, supervisory/administrative position and other.

The level of nursing education (Item 76) was designated as R.N.A. or C.N.O., R.N. Diploma, Bachelor's Degree, R.N. Diploma plus Clinical post-graduate course, and Bachelor's Degree plus Clinical post-graduate course.

Item 77 referred to the nurses' age (years) which was broken down into 20 - 30 years, 31 - 40 years, 41 - 50 years, and over 51 years of age for the analysis.

Marital status was reported in item 78 and categorized into four parts: 1) single: never married; 2) single: separated, divorced, widowed; 3) married, and 4) living with significant other. The respondents were requested to check appropriate categories.

Item 79 related to the sex of the respondent.

The nurses' personal experience with cancer and death were reported in item 80 (diagnostic tests for cancer of the self), item 81 (cancer - self), items 82, 83 (cancer in family and time of diagnosis), items 84, 85 (death in family and time of death). Items 80, 81 and 83 were dichotomous questions (yes, no).

In addition, the nurses' work experiences with terminally ill patients and actual death of a patient were reported in items 86 and 87, utilizing an 8-point scale ranging from "never" to "usually every day". Items 88 and 89 referred to the time of the nurses' most recent encounter with a patient's death (number of days since last death within the past month).

The nurse's estimation of time required to care for the terminally ill patients as compared to patients being actively treated (item 90) was reported on a 5-point scale from "much more time consuming" to "much less time consuming". In addition, the nurse rated his/her level of confidence in providing both technical care and psychological care for terminally ill patients on a 4-point scale, ranging from "not at all confident" to "very confident" (item 91, and 92). Item 93, related to the overall satisfaction of the nurses in their work and was reported on a 5-point scale ranging from "strongly satisfied" to "very dissatisfied".

Another group of items related to the nurses' personal death awareness and belief orientation. Item 94 referred to the extent to which the nurse had come to terms with his/her mortality. A 4-point scale was utilized ranging from "yes", "to a great extent", "only in part" and "no". Any death threats were acknowledged as "yes" or "no" in item 95. Frequency of thinking of one's own death was reported in item 96 on a 5-point scale, ranging from "very frequently", (at least once per day) to "never".

Items 97 and 98 related to the subjects' attitude about and understanding of, the term death, respectively. The respondents were requested to check appropriate descriptions delineated in the items.

Item 99 related to the nurses' religious affiliation. In addition, item 100 referred to the nurses' perception of their religiosity, and utilized a 5-point scale ranging from "very religious" to "anti-religious". Frequency of church attendance was reported as "never", "occasionally", "frequently" or "very frequently" in item 101. Item 102 related to the role of religion in shaping attitudes and was reported on a 5-point scale ranging from "a very significant role" to "no role at all". Similarly, the extent of belief in life after death was reported on a 5-point scale ranging from "strongly believe in it" to "convinced it does not exist". And lastly, item 104, itemized characteristics of personal beliefs and the nurses were requested to check those appropriate to them. The questionnaire is shown

in the last part of Appendix B.

Measurement

In this study, stress was operationally defined as comprising two dimensions: the amount of stress perceived by the respondents in relation to the various possible sources of stress, and the frequency of occurrence of each of the potentially stressful situations. In addition, composite measures of stress were derived by multiplying the stress level score by the stress frequency score for each of the 72 items.[1] These composite stress measures were seen as a means of determining the total amount of stress as perceived by the respondents in relation to each potential source of stress. For example, a particular situation may be perceived as very stressful, but if the situation did not occur, it would not truly represent an actual source of stress for the individual.

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[1] The use of composite stress scores was utilized in a Masters thesis by Pinnell, L.E., Perceptions of Stress among Hospital Staff. Edmonton: University of Alberta, Faculty of Nursing, 1979.

Data Collection

The questionnaires were distributed to the various nursing areas within the Institute, accompanied by a letter of explanation (Appendix B). The respondents were asked to return the completed questionnaire within one week. As mentioned earlier, participation in the study was voluntary and confidentiality was assured.

Data Analysis

The unit of analysis was the individual respondent. As indicated earlier nursing staff included in the study were R.N.'s, R.N.A.'s, and C.N.O.'s on either full or part-time staff status.

Sources of Stress and Frequency of Occurrence

The sources of stress were identified by analyzing the data in terms of perceived: 1) amount of stress, 2) frequency of occurrences of the situations and the 3) composite scores comprising both dimensions.

For each item the respondents were asked to indicate the level of stress each described situation was perceived to create, by checking the appropriate space on a five-point scale, with a score of one representing the lowest level of stress. In order to determine how stressful each situation was perceived to be, in

relation to the other situations, mean response scores were calculated for each item. Thirdly, the items were then rank-ordered according to the amount of stress they were perceived to represent. With reference to the frequency of occurrence (the second half of the items), the same procedure was utilized. Again a five-point scale was derived, with a score of one representing "never".

Composite Stress Scores

As a means of determining if the respondents differentiated between the two parts of each item (amount of stress and frequency of occurrence), Pearson's correlation coefficients with a level of significance (0.01) were computed. The number of significant correlation coefficients was few. Accordingly, a composite measure of stress was computed for each respondent on all 72 items. This was derived by multiplying each nurse's response score for the first half of each item by the response score for the second half of the item. In addition, mean composite stress scores for all nurses were calculated for each item and rank ordered according to level of stress. Composite stress scores were then utilized for all subsequent data analysis.

Factor Analysis

Factor analysis was utilized to identify major types of stress being measured and to examine the extent to which the four

sources of stress identified a priori, correspond to the empirically derived factors. This procedure was based on the assumption that items (situations) measuring the same hypothetical construct will tend to correlate and show up in factor solutions as loading on the same factor (Thorndike and Hagen, 1969, p 247-248). Factor analysis is a descriptive technique which in effect is "a method for extracting common factors variances from sets of measures" (Kerlinger,1973, p.659). Not only does factor analysis serve the course of scientific parsimony by thus limiting the number of variables with which an investigator must cope, this procedure can also help to locate and identify unities or fundamental properties underlying a set of situational variables (Kerlinger, 1973, p. 150).

Initially factor analysis on the 72 items was performed to obtain all Eigenvalues greater than one and to examine 4,5,6,7, and 8 factor solutions. Both orthogonal and oblique solutions were examined. A solution was sought which explained a reasonable proportion of variance yet was consistent with a priori considerations of stress.

A five-factor orthogonal solution was deemed to be most appropriate which used 36 of the original 72 items, and explained 57.4 per cent of the variance. Once the most meaningful factorial solution was obtained, factor scores were also calculated for each respondent.

Regression Analysis

In order to identify the best predictors of the respondents' scores on the stress factors, step-wise multiple regression analysis was performed. This procedure, in effect, was an attempt to find the best combination of predictors and their relationship with the stress factors (Kim & Kohout, 1975, p.321) A number of predictors were considered: area of nursing, years of nursing experience, experience at the Institute, education, age, marital status, confidence in providing care, job satisfaction, personal history with cancer, personal death history, personal death awareness and belief orientation (N = 24 predictors). In order to utilize multiple regression, dummy variables were created to replace areas of nursing, level of education, and marital status, which were all categorical variables (i.e., nominal scale).

CHAPTER IV

ANALYSIS OF RESULTS AND DISCUSSION

This chapter is divided into four sections. First the sources of stress are described according to their perceived intensity and their frequency of occurrence. This is followed by a presentation of the results of factor analysis. Thirdly, the results of step-wise regression analysis, identifying potential predictors of sources of stress, is reported. The fourth section represents a discussion of the key results.

Description of Sources of Stress

Recorded Amount of Stress

The perceived amount of stress associated with each situation (item), as indicated by percentage responses are shown in Table I. The modal category of response indicates that 42 of the 72 situations (items) suggested "some stress" to the largest number of respondents. The second largest number of respondents recorded "quite a bit of stress" for 19 of the 72 situations. Three of the situations had equal modal responses for two of the levels specified (item 4, 25 and 32). The remaining 8 items had highest agreement on either "almost no", "very little", or "very much" stress. Overall the majority of nurses report either "some" or "quite a bit" of stress perceived from each situation. It is

TABLE 1
Percentage Responses to First Half of Stress Items Indicating the Perceived Level of Stress Associated with each Source

Item Number	Item Content	Level of Stress (% Response)				
		Almost no Stress	Very Little	Some	Quite a Bit	Very Much
1.	Physicians not available	0	4.6	24.1	44.8[a]	26.4
2.	Patient understanding of condition and Rx	27.6	27.6	31.0	12.6	1.1
3.	Personality conflicts - nursing staff	12.6	11.5	31.0	29.9	14.9
4.	Patient advised - goal of care is palliative	3.4	10.3	39.1	39.1	8.0
5.	Night shift	19.8	12.8	30.2	23.3	14.0
6.	Family not informed - poor prognosis of patient	0	1.1	12.6	42.5	43.7
7.	Patient suffering	0	1.1	35.6	43.7	19.5
8.	Family critical of your care	1.1	3.4	32.2	34.5	28.7
9.	Learn about new protocols	13.8	28.7	43.7	11.5	2.3
10.	Patient becomes weaker	2.3	13.8	51.7	26.4	5.7
11.	New research protocols utilized	3.4	25.3	44.8	25.3	1.1
12.	Nursing staff do not communicate effectively	4.6	6.9	29.9	44.8	13.8
13.	Patient undergoes disfiguring surgery	2.3	19.5	43.7	24.1	10.3
14	Maintain skills - intravenous infusions	41.2	25.9	22.4	8.2	2.4
15.	Patient dies without family present	2.3	4.6	36.8	42.5	13.8
16.	Patient appears well - poor prognosis	2.3	7.0	51.2	30.2	9.3
17.	Poor communication, (Dr., Nurse)	0	2.3	26.4	39.1	32.2
18.	Patient readmitted - recurrence of disease - anxious	3.4	9.2	44.8	34.5	8.0
19.	Insufficient resources to provide emotional support	2.3	4.6	23.0	37.9	32.2
20.	Family discuss poor prognosis and impending death	4.6	20.7	41.4	25.3	8.0
21.	Patient pretends not to be aware of diagnosis	1.1	8.0	41.4	40.2	9.2
22.	Provide therapy - loss of hair as a side effect	31.0	24.1	35.6	8.0	1.1
23.	Family ask questions after patient dies - re cause	2.3	20.7	36.8	27.6	12.6
24.	Patient readmitted - recurrence unco-operative	2.3	3.4	43.7	42.5	8.0
25.	Questioned - unorthodox forms of treatment	13.8	35.6	35.6	10.3	4.6
26.	Scope of your job is not defined clearly	12.6	11.5	37.9	24.1	13.8
27.	Patient with young children dies	0	3.4	12.6	43.7	40.2
28.	Patient's behavior is troublesome	2.3	4.6	43.7	35.6	13.8
29.	Team members make conflicting demands	8.1	22.1	36.0	30.2	3.5

[a] Modal category of response underlined

cont.

TABLE 1

Percentage Responses to First Half of Stress Items Indicating the Perceived Level of Stress Associated with each Source

Item Number	Item Content	Level of Stress (% Response)				
		Almost no Stress	Very Little	Some	Quite a Bit	Very Much
30.	Physician is diagnosed with cancer	2.3	12.6	51.7[a]	27.6	5.7
31.	Family constantly at the bedside	19.5	26.4	41.4	12.6	0
32.	Patient dies on your shift	1.1	1.1	19.5	39.1	39.1
33.	Admit a patient - palliative treatment only	12.6	24.1	41.4	17.2	4.6
34.	Terminate a relationship with family	9.2	14.9	40.2	26.4	9.2
35.	Patient dies within one week after discharge	4.6	9.2	57.5	20.7	8.0
36.	Family upset after the patient dies	0	10.3	42.5	32.2	14.9
37.	Patient your own age dies	1.1	4.6	27.6	41.4	25.3
38.	Residents are new on unit	10.3	10.3	31.0	37.9	10.3
39.	Patient understanding of hospital's operation	52.3	37.2	8.1	2.3	0
40.	Life-sustaining measures - terminal diagnosis	1.1	4.6	24.1	44.8	25.3
41.	Patient unco-operative	1.1	6.9	49.4	39.1	3.4
42.	Family pretend impending death not a fact	0	1.1	25.3	47.1	26.4
43.	Patient develops neurological impairment	1.1	6.9	37.9	46.0	8.0
44.	Team unable to plan together	2.3	4.6	36.8	28.7	27.6
45.	Responsibilities of your job not clear	10.3	16.1	37.9	26.4	9.2
46.	Patient receives toxic treatments	9.3	19.8	50.0	18.6	2.3
47.	Perform procedures which cause pain	2.3	4.6	37.9	41.4	13.8
48.	Patient discussed impending death	3.4	18.4	50.6	20.7	6.9
49.	Family ask to be involved in care	36.8	34.0	9.2	0	0
50.	Patient never verbalizes any concerns	1.1	12.6	41.4	36.8	8.0
51.	Patient your own age diagnosed with cancer	3.4	4.6	34.5	40.2	17.2
52.	Patient vents much anger	2.3	20.7	42.5	29.9	4.6
53	Evening shift	29.4	23.5	24.7	20.0	2.4
54.	Family spend less and less time with patient	1.1	5.7	36.8	37.9	18.4
55.	Patient with young children diagnosed with cancer	0	1.1	26.4	44.8	27.6
56.	Relieve on another unit	9.2	19.5	34.5	27.6	9.2
57.	Patient does not have family visiting	2.3	2.3	42.5	46.0	6.9
58.	Asked to work on your day off	12.6	16.1	35.6	26.4	9.2
59.	Care for the body after death	9.2	26.4	40.2	18.4	5.7
60.	Family asking questions about patient's condition	2.3	13.8	48.3	29.9	5.7
61.	Workload is very heavy	0	1.1	12.6	49.4	36.8

[a] Modal category of response underlined

cont.

TABLE 1

Percentage Responses to First Half of Stress Items Indicating the Perceived Level of Stress Associated with each Source

Item Number	Item Content	Level of Stress (% Response)				
		Almost no Stress	Very Little	Some	Quite a Bit	Very Much
62.	Physicians impatient with nursing staff	2.3	8.0	25.3	43.7[a]	20.7
63.	Patient informed of his diagnosis of cancer	3.4	9.2	43.7	39.1	4.6
64.	Staff display strong emotional feelings	4.6	11.5	49.4	29.9	4.6
65.	Shifts leave unfinished work	5.7	2.3	40.2	39.1	12.6
66.	Patient understanding of the treatment	19.5	46.0	25.3	6.9	2.3
67.	Insufficient time to provide emotional support	0	1.1	13.8	37.9	47.1
68.	Therapy causes severe nausea and vomiting	4.6	10.3	51.7	31.0	2.3
69.	Family ask questions re autopsy	10.3	27.6	42.5	18.4	1.1
70.	Nurse is diagnosed with cancer	0	8.0	52.9	29.9	9.2
71.	Family ask questions re prognosis	2.3	9.2	54.0	29.9	4.6
72.	Physicians critical of nursing staff	0	4.6	17.2	35.6	42.5

[a] Modal category of response underlined

interesting to note that the perceived amount of stress for 11 of the 72 items received majority agreement by the respondents ($\geq$ 50%). Item 35 relating to the death of the patient within one week after discharge received the highest agreement, which represented some stress to 57.5% of the respondents. Also amongst the situations which received majority agreement was item 39 relating to the patients' understanding of hospital operation, with 52.3% of the respondents recording "almost no stress". The analysis also suggested that the amount of stress related to working the evening shift (item 53) was fairly evenly distributed amongst the first four levels.

The mean response of all respondents for each item were calculated then rank ordered from high to low and are reported in Table 2. Overall, in relation to all situations, insufficient time to provide emotional support (item 67), and the family not informed regarding the poor prognosis of the patient (item 6), contributed the greatest amount of stress. Conversely, patients' understanding of the hospital operation (item 39) generated the least stress.

Recorded Frequency of Occurrence of Situations

The frequency of occurrence of each situation (items), as indicated by percentage responses are shown in Table 3. In terms of modal categories, the largest number of respondents recorded that 43 of the 72 situations (items) occurred "sometimes" in their work. The second largest number of respondents recorded the frequency of occurrences as "often" for 16 of the 72

TABLE 2
Sources of Stress, Rank Ordered by
Average Level of Stress Reported

Item Number	Item Content	N	Mean Responses[a]
67.	Insufficient time to provide emotional support	87	4.3
6.	Family not informed - poor prognosis of patient	87	4.3
72.	Physicians critical of nursing staff	87	4.2
61.	Workload is very heavy	87	4.2
27.	Patient with young children dies	87	4.2
32.	Patient dies on your shift	87	4.1
55.	Patient with young children diagnosed with cancer	87	4.0
42.	Family pretend impending death not a fact	87	4.0
17.	Poor communication, (Dr., Nurse)	87	4.0
40.	Life-sustaining measures - terminal diagnosis	87	3.9
37.	Patient your own age dies	87	3.9
19.	Insufficient resources to provide emotional support	87	3.9
8.	Family critical of your care	87	3.9
1.	Physicians not available	87	3.9
7.	Patient suffering	87	3.8
62.	Physicians impatient with nursing staff	87	3.7
54.	Family spend less and less time with patient	87	3.7
44.	Team unable to plan together	87	3.7
51.	Patient your own age diagnosed with cancer	87	3.6
47.	Perform procedures which cause pain	87	3.6
15.	Patient dies without family present	87	3.6
12.	Nursing staff do not communicate effectively	87	3.6
65.	Shifts leave unfinished work	87	3.5
57.	Patient does not have family visiting	87	3.5
43.	Patient develops neurological impairment	87	3.5
36.	Family upset after the patient dies	87	3.5
28.	Patient's behavior is troublesome	87	3.5
24.	Patient readmitted - recurrence unco-operative	87	3.5
21.	Patient pretends not to be aware of diagnosis	87	3.5
70.	Nurse is diagnosed with cancer	87.	3.4
50.	Patient never verbalizes any concerns	87	3.4
41.	Patient unco-operative	87	3.4
16.	Patient appears well - poor prognosis	86	3.4
4.	Patient advised - goal of care is palliative	87	3.4
63.	Patient informed of his diagnosis of cancer	87	3.3
38.	Residents are new on unit	87	3.3
23.	Family ask questions after patient dies - re cause	87	3.3
18.	Patient readmitted - recurrence of disease - anxious	87	3.3
71.	Family ask questions re prognosis	87	3.2
68.	Therapy causes severe nausea and vomiting	87	3.2
64.	Staff display strong emotional feelings	87	3.2
60.	Family asking questions about patient's condition	87	3.2
35.	Patient dies within one week after discharge	87	3.2
30.	Physician is diagnosed with cancer	87	3.2

[a] Assigned Scores were: "Almost no stress" (1), "Very little" (2) "Some" (3), "Quite a bit" (4), "Very Much" (5)

cont.

TABLE 2
Sources of Stress, Rank Ordered by Average Level of Stress Reported

Item Number	Item Content	N	Mean Responses[a]
13.	Patient undergoes disfiguring surgery	87	3.2
10.	Patient becomes weaker	87	3.2
3.	Personality conflicts - nursing staff	87	3.2
56.	Relieve on another unit	87	3.1
52.	Patient vents much anger	87	3.1
48.	Patient discusses impending death	87	3.1
45.	Responsibilities of your job not clear	87	3.1
34.	Terminate a relationship with family	87	3.1
26.	Scope of your job is not defined clearly	87	3.1
20.	Family discuss poor prognosis and impending death	87	3.1
58.	Asked to work on your day off	87	3.0
29.	Team members make conflicting demands	86	3.0
11.	New research protocols utilized	87	3.0
5.	Night shift	86	3.0
59.	Care for the body after death	87	2.9
46.	Patient receives toxic treatments	86	2.8
33.	Admit a patient - palliative treatment only	87	2.8
69.	Family asks questions re autopsy	87	2.7
25.	Questioned - unorthodox forms of treatment	87	2.6
9.	Learn about new protocols	87	2.6
31.	Family constantly at the bedside	87	2.5
53.	Evening shift	86	2.4
66.	Patiend understanding of the treatment	87	2.3
2.	Patient understanding of condition and Rx	87	2.3
22.	Provide therapy - loss of hair as a side effect	87	2.2
14.	Maintain skills - intravenous infusions	86	2.0
49.	Family ask to be involved in care	87	1.7
39.	Patient understanding of hospital's operation	87	1.6

[a] Assigned Scores were: "Amost no stress" (1), "Very little" (2), "Some" (3) "Quite a bit" (4), "Very Much" (5)

TABLE 3

Percentage Responses to Second Half of Stress Items Indicating the Perceived Frequency of Occurrence of Situations

Item Number	Item Content	Frequency of Occurrence (% Response)				
		Never	Rarely	Some-Times	Often	Always
1.	Physicians not available	1.1	19.5	60.9[a]	18.4	0
2.	Patient understanding of condition and Rx	0	28.7	50.6	20.7	0
3.	Personality conflicts - nursing staff	1.1	69.0	25.3	4.6	0
4.	Patient advised - goal of care is palliative	2.3	11.5	46.0	39.1	1.1
5.	Night shift	33.7	11.6	20.9	25.6	8.1
6.	Family not informed - poor prognosis of patient	2.3	23.0	48.3	26.4	0
7.	Patient suffering	0	2.3	28.7	51.7	17.2
8.	Family critical of your care	5.7	71.3	21.8	1.1	0
9.	Learn about new protocols	4.6	8.0	24.1	52.9	10.3
10.	Patient becomes weaker	2.3	9.2	21.8	64.4	2.3
11.	New research protocols utilized	2.3	6.9	39.1	49.4	2.3
12.	Nursing staff do not communicate effectively	4.6	43.7	44.8	6.9	0
13.	Patient undergoes disfiguring surgery	5.7	34.5	36.8	23.0	0
14	Maintain skills - intravenous infusions	14.9	11.5	14.9	20.7	37.9
15.	Patient dies without family present	9.2	35.6	46.0	9.2	0
16.	Patient appears well - poor prognosis	0	7.0	37.2	55.8	0
17.	Poor communication, (Dr., Nurse)	0	8.0	54.0	34.5	3.4
18.	Patient readmitted - recurrence of disease - anxious	0	1.1	36.8	59.8	2.3
19.	Insufficient resources to provide emotional support	0	17.2	41.4	37.9	3.4
20.	Family discuss poor prognosis and impending death	1.1	10.3	59.8	25.3	3.4
21.	Patient pretends not to be aware of diagnosis	1.1	24.1	59.8	13.8	1.1
22.	Provide therapy - loss of hair as a side effect	3.4	1.1	8.0	77.0	10.3
23.	Family ask questions after patient dies - re cause	6.9	49.4	36.8	6.9	0
24.	Patient readmitted - recurrence unco-operative	1.1	42.5	52.9	3.4	0
25.	Questioned - unorthodox forms of treatment	2.3	46.0	46.0	5.7	0
26.	Scope of your job is not defined clearly	18.4	42.5	33.3	4.6	1.1
27.	Patient with young children dies	1.1	10.3	52.9	34.5	1.1
28.	Patient's behavior is troublesome	1.1	17.2	67.8	13.8	0
29.	Team members make conflicting demands	11.6	53.5	27.9	7.0	0

[a] Modal category of response underlined

cont.

TABLE 3
Percentage Responses to Second Half of Stress Items Indicating the Perceived Frequency of Occurrence of Situations

Item Number	Item Content	Frequency of Occurrence (% Response)				
		Never	Rarely	Some-Times	Often	Always
30.	Physician is diagnosed with cancer	0	4.6	52.9[a]	41.4	1.1
31.	Family constantly at the bedside	6.9	5.7	29.9	56.3	1.1
32.	Patient dies on your shift	8.0	13.8	51.7	25.3	1.1
33.	Admit a patient - palliative treatment only	4.6	13.8	51.7	29.9	0
34.	Terminate a relationship with family	5.7	20.7	35.6	32.2	5.7
35.	Patient dies within one week after discharge	0	19.5	59.8	20.7	0
36.	Family upset after the patient dies	4.6	4.6	34.5	49.4	6.9
37.	Patient your own age dies	1.1	11.5	57.5	28.7	1.1
38.	Residents are new on unit	2.3	5.7	26.4	57.5	8.0
39.	Patient understanding of hospital's operation	0	9.3	44.2	45.3	1.2
40.	Life-sustaining measures - terminal diagnosis	3.4	14.9	46.0	35.6	0
41.	Patient unco-operative	1.1	42.5	51.7	4.6	0
42.	Family pretend impending death not a fact	1.1	24.1	59.8	14.9	0
43.	Patient develops neurological impairment	2.3	10.3	63.2	24.1	0
44.	Team unable to plan together	3.4	35.6	34.5	19.5	6.9
45.	Responsibilities of your job not clear	17.2	51.7	21.8	9.2	0
46.	Patient receives toxic treatments	1.2	3.5	16.3	55.8	23.3
47.	Perform procedures which cause pain	4.6	12.6	47.1	35.6	0
48.	Patient discussed impending death	1.1	17.2	67.8	13.8	0
49.	Family ask to be involved in care	4.6	11.5	59.8	23.0	1.1
50.	Patient never verbalizes any concerns	0	10.3	62.1	27.6	0
51.	Patient your own age diagnosed with cancer	0	5.7	56.3	37.9	0
52.	Patient vents much anger	0	16.1	71.3	12.6	0
53	Evening shift	23.5	12.9	15.3	35.3	12.9
54.	Family spend less and less time with patient	4.6	29.9	58.6	6.9	0
55.	Patient with young children diagnosed with cancer	0	3.4	50.6	46.0	0
56.	Relieve on another unit	20.7	41.4	32.2	5.7	0
57.	Patient does not have family visiting	4.6	21.8	65.5	8.0	0
58.	Asked to work on your day off	12.6	49.4	29.9	8.0	0
59.	Care for the body after death	10.3	11.5	51.7	21.8	4.6
60.	Family asking questions about patient's condition	1.1	8.0	47.1	42.5	1.1
61.	Workload is very heavy	5.7	8.0	23.0	59.8	3.4

[a] Modal category of response underlined

cont.

TABLE 3

Percentage Responses to Second Half of Stress Items Indicating the Perceived Frequency of Occurrence of Situations

Item Number	Item Content	Frequency of Occurrence[a] (% Response)				
		Never	Rarely	Some-Times	Often	Always
62.	Physicians impatient with nursing staff	1.1	33.3	52.9	12.6	0
63.	Patient informed of his diagnosis of cancer	5.7	36.8	50.6	6.9	0
64.	Staff display strong emotional feelings	0	19.5	65.5	14.9	0
65.	Shifts leave unfinished work	5.7	31.0	56.3	5.7	1.1
66.	Patient understanding of the treatment	1.1	25.3	60.9	11.5	1.1
67.	Insufficient time to provide emotional support	0	2.3	26.4	64.4	6.9
68.	Therapy causes severe nausea and vomiting	4.6	1.1	12.6	78.2	3.4
69.	Family ask questions re autopsy	18.4	36.8	34.5	10.3	0
70.	Nurse is diagnosed with cancer	1.1	37.9	58.6	2.3	0
71.	Family ask questions re prognosis	4.6	2.3	49.4	43.7	0
72.	Physicians critical of nursing staff	1.1	8.0	59.8	28.7	2.3

[a] Modal category of response underlined

situations and the third largest number of respondents recorded "rarely" for 10 of the total situations. One situation had equal modal responses for two of the frequencies specified (item 25). The two remaining situations had highest agreement on opposite poles, "never" for item 5 and "always" for item 14.

Compared with the perceived amount of stress, the reported frequency of occurrence for 48 of the 72 situations received majority agreement ($\geq$ 50%) in contrast to 11 situations for the amount of stress. This finding suggested that overall the situations described occur in most areas of work within the Institute and with some regularity. The frequency of occurence for items 68 and 22, both relating to side-effects of treatment, received the highest agreement which occurred "often" for 78.2% and 77% of the respondents respectively.

As with the amount of stress, mean response scores of all respondents for the second dimension of each item were calculated and subsequently rank ordered according to frequency of occurrence, as reported in Table 4. Overall, in relation to all situations, patients receiving toxic treatments occurred most frequently, while four of the situations described occurred least frequently (rarely) with a mean response of 2.2.
Specifically these situations related to physicians and families being critical of staff, relieving on another unit, and ambiguity of job responsibility.

In order to determine the independence of response by the respondents between the two dimensions of each situation (amount

TABLE 4
Sources of Stress, Rank Ordered by
Average Frequency of Occurrence Reported

Item Number	Item Content	N	Mean Responses[a]
46.	Patient receives toxic treatments	87	4.0
22.	Provide therapy - loss of hair as a side effect	87	3.9
67.	Insufficient time to provide emotional support	87	3.8
7.	Patient suffering	87	3.8
68.	Therapy causes severe nausea and vomiting	87	3.7
38.	Residents are new on unit	87	3.6
18.	Patient readmitted - recurrence of disease - anxious	87	3.6
10.	Patient becomes weaker	87	3.6
9.	Learn about new protocols	87	3.6
14	Maintain skills - intravenous infusions	87	3.6
61.	Workload is very heavy	87	3.5
36.	Family upset after the patient dies	87	3.5
16.	Patient appears well - poor prognosis	87	3.5
55.	Patient with young children diagnosed with cancer	87	3.4
11.	New research protocols utilized	87	3.4
31.	Family constantly at the bedside	87	3.4
39.	Patient understanding of hospital's operation	86	3.4
17.	Poor communication, (Dr., Nurse)	87	3.3
19.	Insufficient resources to provide emotional support	87	3.3
51.	Patient your own age diagnosed with cancer	87	3.3
4.	Patient advised - goal of care is palliative	87	3.3
71.	Family ask questions re prognosis	87	3.3
60.	Family asking questions about patient's condition	87	3.3
27.	Patient with young children dies	87	3.2
37.	Patient your own age dies	87	3.2
50.	Patient never verbalizes any concerns	87	3.2
20.	Family discuss poor prognosis and impending death	87	3.2
40.	Life-sustaining measures - terminal diagnosis	87	3.1
47.	Perform procedures which cause pain	87	3.1
43.	Patient develops neurological impairment	87	3.1
34.	Terminate a relationship with family	87	3.1
33.	Admit a patient - palliative treatment only	87	3.1
6.	Family not informed - poor prognosis of patient	87	3.0
32.	Patient dies on your shift	87	3.0
1.	Physicians not available	87	3.0
64.	Staff display strong emotional feelings	87	3.0
35.	Patient dies within one week after discharge	87	3.0
52.	Patient vents much anger	87	3.0
59.	Care for the body after death	87	3.0
53	Evening shift	86	3.0
49.	Family ask to be involved in care	87	3.0
42.	Family pretend impending death not a fact	87	2.9
44.	Team unable to plan together	87	2.9
28.	Patient's behavior is troublesome	87	2.9

[a] Assigned scores were: "Never" (1), "Rarely" (2), "Sometimes" (3), "Often" (4), "Always" (5)

cont.

TABLE 4
Sources of Stress, Rank Ordered by
Average Frequency of Occurrence Reported

Item Number	Item Content	N	Mean Responses[a]
21.	Patient pretends not to be aware of diagnosis	87	2.9
48.	Patient discussed impending death	87	2.9
66.	Patient understanding of the treatment	87	2.9
2.	Patient understanding of condition and Rx	87	2.9
62.	Physicians impatient with nursing staff	87	2.8
57.	Patient does not have family visiting	87	2.8
13.	Patient undergoes disfiguring surgery	87	2.8
54.	Family spend less and less time with patient	87	2.7
65.	Shifts leave unfinished work	87	2.7
15.	Patient dies without family present	87	2.6
24.	Patient readmitted - recurrence unco-operative	87	2.6
70.	Nurse is diagnosed with cancer	87	2.6
41.	Patient unco-operative	87	2.6
63.	Patient informed of his diagnosis of cancer	87	2.6
5.	Night shift	86	2.6
25.	Questioned - unorthodox forms of treatment	87	2.6
12.	Nursing staff do not communicate effectively	87	2.5
23.	Family ask questions after patient dies - re cause	87	2.4
30.	Physician is diagnosed with cancer	87	2.4
69.	Family ask questions re autopsy	87	2.4
3.	Personality conflicts - nursing staff	87	2.3
26	Scope of your job is not defined clearly	87	2.3
58.	Asked to work on your day off	87	2.3
29	Team members make conflicting demands	86	2.3
72.	Physicians critical of nursing staff	87	2.2
8.	Family critical of your care	87	2.2
56.	Relieve on another unit	87	2.2
45.	Responsibilities of your job not clear	87	2.2

[a] Assigned scores were: "Never" (1), "Rarely" (2), "Sometimes" (3), "Often" (4), "Always" (5)

of stress and frequency of occurrence correlations were computed for each item. Correlations ($\leq$ 0.25) between sources of stress and frequency of occurrence for each item were reported in Table 5. These results indicate that 12.5 per cent of the mean response for both dimensions of each situation reported a Pearson R equal to or greater than 0.25. More specifically, six of the nine items reporting a correlation score greater than 0.25 related to secondary stress, that of interpersonal communication and work laod.

Composite Stress Scores

Based on these results, assuming then, that the respondents were generally able to rate the two dimensions of the question independently, a composite measure of stress was computed for each respondent on all 72 items. As explained in Chapter 111 a composite measure for each nurse was derived as a multiple of the two dimensions of each item (amount score x frequency score). In addition, mean composite stress scores were calculated and rank ordered as indicated in Table 6. It would appear that insufficient time to provide emotional support (item 67) was responsible for creating the most stress (encompassing both the level of stress and frequency of occurrence), and conversely, the family asking to be involved in the patient's care (item 49) was viewed as contribuitng the least stress.

As the best representation of the total amount of stress perceived by the respondents, the composite stress scores were

TABLE 5

Correlations greater than .25 Between Source of Stress and Frequency of Occurrence Reported for Each Item

Item Number	Item Content (Amount)	Correlations (FREQUENCY) 16	17	19	28	29	38	44	61	67
16.	Patient appears well - poor prognosis	0.28								
17.	Poor communication, (Dr., Nurse)		0.43							
19.	Insufficient resources to provide emotional support			0.28						
28.	Patient's behavior is troublesome				0.35					
29.	Team members make conflicting demands					0.48				
38.	Residents are new on unit						0.36			
44.	Team unable to plan together							0.38		
61.	Workload is very heavy								0.27	
67.	Insufficient time to provide emotional support									0.32

TABLE 6

Rank Ordering of Composite Stress Score

Item Number	Item Content	N	Mean Responses[a]
67.	Insufficient time to provide emotional support	87	16.3
61.	Workload is very heavy	87	14.8
7.	Patient suffering	87	14.7
55.	Patient with young children diagnosed with cancer	87	13.7
27.	Patient with young children dies	87	13.7
17.	Poor communication, (Dr., Nurse)	87	13.6
19.	Insufficient resources to provide emotional support	87	13.1
6.	Family not informed - poor prognosis of patient	87	12.9
32.	Patient dies on your shift	87	12.5
40.	Life-sustaining measures - terminal diagnosis	87	12.4
36.	Family upset after the patient dies	87	12.3
38.	Residents are new on unit	87	12.2
37.	Patient your own age dies	87	12.2
18.	Patient readmitted - recurrence of disease - anxious	87	12.1
51.	Patient your own age diagnosed with cancer	87	12.1
68.	Therapy causes severe nausea and vomiting	87	11.9
16.	Patient appears well - poor prognosis	86	11.9
1.	Physicians not available	87	11.8
42.	Family pretend impending death not a fact	87	11.5
10.	Patient becomes weaker	87	11.4
47.	Perform procedures which cause pain	87	11.3
44.	Team unable to plan together	87	11.3
46.	Patient receives toxic treatments	86	11.1
4.	Patient advised - goal of care is palliative	87	11.1
43.	Patient develops neurological impairment	87	11.0
71.	Family ask questions re prognosis	87	10.9
60.	Family asking questions about patient's condition	87	10.8
50.	Patient never verbalizes any concerns	87	10.8
28.	Patient's behavior is troublesome	87	10.6
62.	Physicians impatient with nursing staff	87	10.4
11.	New research protocols utilized	87	10.2
21.	Patient pretends not to be aware of diagnosis	87	10.2
20.	Family discuss poor prognosis and impending death	87	9.9
57.	Patient does not have family visiting	87	9.9
34.	Terminate a relationship with family	87	9.8
54.	Family spend less and less time with patient	87	9.8
35.	Patient dies within one week after discharge	87	9.6
64.	Staff display strong emotional feelings	87	9.5
65.	Shifts leave unfinished work	87	9.4
9.	Learn about new protocols	87	9.3
52.	Patient vents much anger	87	9.3
15.	Patient dies without family present	87	9.3
72.	Physicians critical of nursing staff	87	9.3
12.	Nursing staff do not communicate effectively	87	9.2

[a] Possible range for composite stress scores was 1 to 25

cont.

TABLE 6

Rank Ordering of Composite Stress Score

Item Number	Item Content	N	Mean Responses[a]
48.	Patient discussed impending death	87	9.1
24.	Patient readmitted - recurrence unco-operative	87	9.1
70.	Nurse is diagnosed with cancer	87	8.9
13.	Patient undergoes disfiguring surgery	87	8.8
41.	Patient unco-operative	87	8.7
63.	Patient informed of his diagnosis of cancer	87	8.7
22.	Provide therapy - loss of hair as a side effect	87	8.6
33.	Admit a patient - palliative treatment only	87	8.6
59.	Care for the body after death	87	8.6
8.	Family critical of your care	87	8.5
31.	Family constantly at the bedside	87	8.4
5.	Night shift	86	8.3
23.	Family ask questions after patient dies - re cause	87	8.1
30.	Physician is diagnosed with cancer	87	7.8
3.	Personality conflicts - nursing staff	87	7.7
53	Evening shift	86	7.6
26	Scope of your job is not defined clearly	87	7.4
29	Team members make conflicting demands	86	7.2
14	Maintain skills - intravenous infusions	86	7.1
58.	Asked to work on your day off	87	7.1
45.	Responsibilities of your job not clear	87	7.1
2.	Patient understanding of condition and Rx	87	6.8
56.	Relieve on another unit	87	6.7
25.	Questioned - unorthodox forms of treatment	87	6.6
69.	Family ask questions re autopsy	87	6.6
66.	Patient understanding of the treatment	87	6.4
39.	Patient understanding of hospital's operation	86	5.4
49.	Family ask to be involved in care	87	5.2

[a] Possible range for composite stress scores was 1 to 25

utilized for all further data analyses.

Factor Analysis

Factor analysis was utilized as a method of exploring the number and nature of the underlying stress types amongst the 72 items. In the first analysis twenty factors were obtained with eigenvalues greater than one and accounting for 77.5% of the variance in individual responses. In order to summarize further, repeated factor analysis, specifying 8,7,6,5 and 4 factors as well as both the orthogonal and oblique rotation were carried out. A five factor solution using varimax rotation was found to be the most satisfactory in terms of number of factors to summarize the item pool. However, this solution accounted for only 44.2 per cent of the variance. At this point 36 items with communalities $\leq$ 0.4 were deleted from the pool. The most interpretable solution was a 5 factor orthogonal solution which explained 57.4% of the variance in responses to 36 items. The final factor structure solution is shown in Table 7. From examination of the items which loaded highly on each factor it was possible to identify the major types of stress.

Each factor is described separately in relation to their theoretical significance, along with a discussion of items loading $\geq$ than .50. It is important to note that items with low loadings also contribute to the description of the factor, indirectly, by suggesting what the factor is not.

TABLE 7
Factor Analysis of Composite Stress Scores
- Orthogonal Solution Varimax Rotation
(36 items)

Item Number	Item Content	Communalities	Factors I	II	III	IV	V
37.	Patient your own age dies	0.787	0.871[a]	0.018	0.093	-0.007	0.136
51.	Patient your own age diagnosed with cancer	0.685	0.769	0.158	0.128	0.038	0.226
59.	Care for the body after death	0.636	0.670	0.323	0.097	0.034	-0.177
32.	Patient dies on your shift	0.652	0.649	0.224	0.414	-0.016	-0.095
27.	Patient with young children dies	0.505	0.555	0.347	0.227	0.036	0.154
35.	Patient dies within one week after discharge	0.420	0.487	0.309	0.169	-0.060	0.233
23.	Family ask questions after patient dies - re cause	0.419	0.480	0.083	0.337	0.250	0.076
50.	Patient never verbalizes any concerns	0.435	0.461	0.313	0.312	0.130	0.103
60.	Family asking questions about patient's condition	0.466	0.449	0.415	0.072	0.236	-0.174
28.	Patient's behavior is troublesome	0.435	0.423	0.318	0.354	0.147	0.090
10.	Patient becomes weaker	0.551	0.126	0.674	0.191	-0.203	0.059
46.	Patient receives toxic treatments	0.530	0.322	0.621	0.199	-0.032	-0.016
18.	Patient readmitted - recurrence of disease - anxious	0.475	0.176	0.614	0.103	0.101	0.215
11.	New research protocols utilized	0.451	0.007	0.613	0.263	0.023	-0.080
43.	Patient develops neurological impairment	0.491	0.258	0.592	0.211	0.104	0.138
33.	Admit a patient - palliative treatment only	0.489	0.343	0.588	0.075	0.096	-0.101
7.	Patient suffering	0.475	0.043	0.537	0.181	0.030	0.388
55.	Patient with young children diagnosed with cancer	0.478	0.435	0.439	0.177	0.111	0.229
30.	Physician is diagnosed with cancer	0.425	0.294	0.439	-0.039	0.205	0.321
57.	Patient does not have family visiting	0.420	0.303	0.400	0.366	0.117	-0.139
40.	Life-sustaining measures - terminal diagnosis	0.616	0.014	0.289	0.723	-0.023	0.096
17.	Poor communication, (Dr., Nurse)	0.601	0.143	0.165	0.683	-0.045	0.291
44.	Team unable to plan together	0.483	0.064	0.033	0.676	0.140	0.036
61.	Workload is very heavy	0.563	0.183	0.289	0.665	0.012	-0.065
38.	Residents are new on unit	0.543	0.301	0.192	0.619	0.179	-0.007

[a] For ease of viewing, items have been re-ordered from the original (Appendix C) and loadings of .50 or greater are underlined.

TABLE 7
Factor Analysis of Composite Stress Scores
- Orthogonal Solution Varimax Rotation
(36 items)

Item Number	Item Content	Communalities	Factors I	II	III	IV	V
62.	Physicians impatient with nursing staff	0.560	0.210	0.059	0.510[a]	0.270	0.424
42.	Family pretend impending death not a fact	0.403	0.386	0.122	0.484	0.040	0.059
65.	Shifts leave unfinished work	0.402	0.348	0.143	0.429	0.118	-0.250
45.	Responsibilities of your job not clear	0.868	0.003	-0.091	0.234	0.889	0.124
26.	Scope of your job is not defined clearly	0.502	0.082	0.015	0.198	0.667	0.107
66.	Patient understanding of the treatment	0.400	0.072	0.347	-0.164	0.495	-0.048
72.	Physicians critical of nursing staff	0.504	0.135	0.105	0.301	0.127	0.607
63.	Patient informed of his diagnosis of cancer	0.481	0.391	0.171	-0.246	0.185	0.452
31.	Family constantly at the bedside	0.465	0.262	0.357	0.322	0.183	-0.363
24.	Patient readmitted - recurrence unco-operative	0.404	0.367	0.327	0.337	0.194	0.106
47.	Perform procedures which cause pain	0.386	0.278	0.356	0.357	0.233	0.005
	Eigenvalues		11.132	2.296	1.905	1.650	1.425
	Proportion of Variance explained by each Factor (Total 57.4%)		32.3%	7.6%	6.5%	5.8%	5.3%

[a]For ease of viewing, items have been reordered from the original (Appendix C) and loadings of .50 or greater are underlined.

Factor 1: Death of a Patient:

The first factor explained 32.3 per cent of the variance explained by all the factors and related primarily to the death of a patient (item 32 & 59) . In addition the construct of social loss was well exemplified in items 27 and 37 utilizing age as the gauge for potential social worth. Although not specifically referring to the death of a patient item 51 related well with the concept of social loss.

Factor 11: Dying and Suffering:

The second factor explained 7.6 per cent of the variance and related primarily to the process of dying (item 10 - becoming weaker, item 18 - recurrence of disease, item 33 - admitted for palliation, item 43 - neurological impairment). Item 7 related to suffering and item 46 implies suffering as a result of toxic agents. The item concerned with the justification for the use of new research protocols (item 11) may also be viewed as suggestive of terminal disease.

Factor 111: Lack of Communication:

This factor related primariy to communications and accounted for 6.5 per cent of the variance. Items 17, 38 and 62 related directly to physician and nursing staff communication and item 40 (life-sustaining measures for patient with a terminal diagnosis), indirectly implies a breakdown of communication. Item 44 referred to breakdown in teamwork and the heavy workload (item 61) may be

the result of lack of communication or on the other hand the cause of communication breakdown.

Factor IV: Job ambiguity:

The fourth factor had only two items with high loadings and accounted for 5.8 per cent of the variance. Item 26 and 45 related to lack of clarity regarding the scope and responsibilities of the job.

Factor V: Critical Physician Feedback:

Only one item loaded highly on the fifth factor and explained only 5.3 per cent of the variance. Item 72 related specifically to physicians being critical of nursing care.

Predicting Nurses' Stress Factor Scores

As indicated in Chapter 111, factor scores for each of the 5 factors were calculated for each respondent. Then step-wise regression analysis was performed to attempt to explain variance in the factor scores and as a means of identifying the best predictors of perceived stress. Possible predictors included: area of nursing, years of nursing experience, experience at the Institute, education, age, marital status, confidence in providing care, job satisfaction, personal history with cancer, personal death history, personal death awareness and belief orientation (N = 24).

For the purpose of regression analysis it was necessary to adjust some of the nominal-scale variables appropriately. First, the variable "area of nursing" was computed into two responses 1) nursing units and 2) other, which comprised of outpatient department, supervisory-administrative role, research, education and social services.

Secondly, the variable "marital status" was computed into two responses, 1) single, separated, divorced or widowed, or 2) married and/or living with a significant other. Similarly for educational level, a dummy variable was created and categorized 1) C.N.A. and R.N. Diploma, and 2) R.N. Diploma plus (B.Sc. plus Clinical Course, or R.N. Diploma plus Clinical Course).

A summary of the results of the step-wise regression analysis to explain variance in the stress factor scores is shown in Tables 8 to 12). For each factor the variables which best explain the respondents' scores are described.

Factor 1: Death of a Patient - of all the possible independent variables (n= 24), there were eight variables which explained at least 1.5 per cent[1] of the variance in the stress factor scores related to death of a patient.

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1 An exception to this criteria was made regarding the predictor "age" (explaining 1.4 per cent of the variance in nurses' scores on Factor 1) in view of the reasonable correlation value - 0.201

In total these 8 variables explained 37.5 per cent of the variance in the scores related to Factor 1, (Table 8). The first variable to enter the stepwise analysis to explain variance in nurses' scores on Factor 1, was the "area of nursing in which the nurses worked", which explained 14.6 per cent of the variance. The variable, "level of education" was
the second to enter the stepwise analysis and explained an additional 8.2 per cent of the variance. The third variable to enter the analysis was "frequency of a patient's death" which, when added to the first two variables, explained an additional 5.5 per cent of the variance.
The nurses' perception of the "significance of religion and "how religious they were", were the fourth and fifth variables to enter the stepwise analysis and explained an additional 1.6 per cent and 2.3 per cent of the variance, respectively. "Age" of the nurse was next to enter the analysis and explained another 1.4 per cent of the variance. The seventh variable to enter the analysis was "years of nursing experience", which explained an additional 2.3 per cent of the variance. And, lastly "number of days since the death of a patient" was the eighth variable to enter the stepwise analysis, and explained an additional 1.5 per cent of the variance.

The variable which correlated the highest with death-related stress (Factor 1) was "area of nursing", with a correlation coefficient of -0.382. "Frequency of patient's death", correlated positively (0.355), with factor 1. The variable with

Table 8

Stepwise Multiple Regression - Stress Factor Scores (Factor 1), With Demographic Variables

Stress Factor	Order of Independent Variables Entering Stepwise Analysis [a]	Mult r	r square	r sq change	Simple r	B	Beta
1. Death of a patient	Area of Nursing	0.382	0.146	0.146	-0.382	-0.561	-0.285
	Education	0.478	0.228	0.082	-0.284	-0.906	-0.330
	Frequency- Patient's death	0.533	0.284	0.055	0.355	0.183	0.254
	Significance of religion	0.548	0.300	0.016	-0.122	-0.173	-0.216
	Extent of being religious	0.569	0.323	0.023	-0.013	0.154	0.138
	Age	0.581	0.338	0.014	-0.201	-0.041	-0.399
	Years of nursing experience	0.601	0.361	0.023	-0.095	-0.046	0.342
	Days - since death of a patient	0.613	0.375	0.015	-0.096	-0.014	-0.131
	Constant -					1.914	

[a] Only predictors explaining at least 1.5 per cent of the variance in stress factor scores are shown.

the third highest correlation with death-related stress was "education" (-0.284). "Age" had a negative correlation (-0.201) and similarly "significance of religion" correlated negatively (-0.122) with factor 1. The three other variables had very low correlations with factor 1: -0.096 for "days - since death of a patient", -0.095 for "years of nursing experience", and -0.013 for "extent of being religious".

Factor 11: Dying and Suffering- As shown in Table 9, there were eight variables which each explained at least 1.5 per cent of the variance in dying and suffering related stress factor scores. Together the eight variables explained 37 per cent of the total variance in the scores related to Factor 11. The "frequency of dealing with the terminally ill", was the first variable to enter the stepwise analysis, and explained 10.9 per cent of the variance in factor scores. The second variable to enter the analysis was "confidence level in meeting psychological needs", which explained an additional 8.7 per cent of the variance. The following six variables entered the stepwise analysis in the following order and each in turn accounted for additional variance: "frequency of church attendance", accounting for an additional 3.5 per cent of the variance, "satisfaction level", explaining 3.1 per cent of the variance, "age", explaining 2.8 per cent of the variance, "cancer of the self", accounting for an additional 2.5 per cent of the variance, "death of a family member" explaining 1.8 per cent of the variance, and "time since death of a family member", explaining 3.8 per cent of the variance.

A correlation coefficient of 0.330 was reported between factor 11 and the first variable to enter the stepwise analysis (frequency of dealing with terminally ill). The variable with the second highest correlation was "confidence in meeting psychological needs" (-0.262). The next three variables to enter the analysis had correlation coefficients of less than 1: "frequency of church

Table 9
Stepwise Multiple Regression - Stress Factor Scores
(Factor 11), With Demographic Variables

Stress Factor	Order of Independent Variables Entering Stepwise Analysis [a]	Mult r	r square	r sq change	Simple r	B	Beta
11. Dying and Suffering	Frequency of dealing with terminally ill	0.330	0.109	0.109	0.330	0.292	0.412
	Confidence - meeting psychological needs	0.443	0.196	0.087	-0.262	-0.376	-0.293
	Frequency - church attendance	0.481	0.231	0.035	0.075	0.270	0.260
	Satisfaction level	0.512	0.262	0.031	0.082	0.166	0.155
	Age	0.538	0.290	0.028	0.095	0.023	0.226
	Cancer - self	0.561	0.314	0.025	-0.230	-0.818	-0.191
	Death - family member	0.576	0.332	0.018	-0.195	-0.983	-0.486
	Time - death of family member	0.609	0.370	0.038	-0.090	0.284	0.392
	Constant -				-2.856		

[a] Only predictors explaining at least 1.4 per cent of the variance in stress factor scores are shown.

attendance" (0.075), "satisfaction level" (0.082) and "age" (0.095). The variables "cancer - self", and "death of a family member", correlated negatively with stress factor 11, with correlation coefficients of -0.230 and -0.195 respectively. And lastly, "time since death of family member", reported a negative correlation coefficient of -0.090.

Factor 111: Lack of Communication - For this factor, six variables each explained a minimum of 1.5 per cent of the variance in factor scores, and accounted for 34.7 per cent of the total variance (Table 10). "Age" of the nurse, explained 13.9 per cent of the variance and was the first variable to enter the stepwise analysis. The variable" time since the death of family member" was second to enter the analysis and explained an additional 8.8 per cent of the variance in stress factor scores. The next four variables to enter the analysis were in the order of: "frequency in thinking of own death, accounting for an additional 5.8 per cent of the variance, "satisfaction level" explaining 2.0 per cent of the variance, "confidence in meeting psychological needs", explaining 2.1 per cent more of the variance, and "death of a patient during past month", accounting for an additional 2.1 per cent of the variance.

The variable which correlated the highest with communication-related stress was "age" with a correlation coefficient of -0.373. The next highest correlation coefficients were reported for "frequency of thinking of own death" (0.313),

Table 10

Stepwise Multiple Regression - Stress Factor Scores (Factor 111), With Demographic Variables

Stress Factor	Order of Independent Variables Entering Stepwise Analysis [a]	Mult r	r square	r sq change	Simple r	B	Beta
111. Lack of Communication	Age	0.373	0.139	0.139	-0.373	-0.037	-0.364
	Time - death of a family member	0.477	0.227	0.088	0.245	0.193	0.262
	Frequency - thinking of own death	0.534	0.285	0.058	0.313	0.328	0.221
	Satisfaction level	0.552	0.304	0.020	-0.050	-0.207	-0.191
	Confidence - meeting psychological needs	0.571	0.326	0.021	0.228	0.215	0.165
	Death of a patient during past month	0.589	0.347	0.021	0.208	0.407	0.147
	Constant -					-0.132	

[a] Only predictors explaining at least 1.4 per cent of the variance in stress factor scores are shown.